

REMOVAL REPORT

FOR

TRANS GULF PETROLEUM CORP - VARNER SECTION 34, TOWNSHIP 12 NORTH, RANGE 11 WEST DESOTO PARISH, LOUISIANA

Prepared for

U.S. Environmental Protection Agency Region 6

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WESTON Work Order No. 12632.001.040.0358
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FPN E03612
EPA FOSC E. Wallace Cooper
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EXECUTIVE SUMMARY

The Trans Gulf Petroleum Corp. - Varner facility (FPN E03612) was identified for removal action under the Oil Pollution Act (OPA) in February 2003. The U.S. Environmental Protection Agency (EPA) in conjunction with the Louisiana Department of Natural Resources (LDNR) initiated a removal action at the site on 1 October 2003. A Ground Truth Survey was provided by the U.S. Army Corps of Engineers (USACE) contractor, and the removal oversight was conducted by Weston Solutions, Inc. (WESTON®), the Superfund Technical Assessment and Response Team (START-2). The removal action included the removal of the aboveground storage tanks (ASTs) and associated piping, removal and/or remediation of oil-impacted soil, and site restoration. START-2 was on-site from 1 October 2003 to 14 October 2003, performing oversight of the removal activities. During this time, the following removal actions were completed:

- 26 cubic yards of oil-impacted soils and sludge from the containment basin (CONT1) was mixed, solidified, and transported off-site for disposal.
- 145 barrels of tank sludge and 130 barrels of saltwater were removed from the ASTs and rig tank and transported off site for disposal.
- 40 cubic yards of scrap metal from the dismantled ASTs and associated pipe was removed and recycled.
- 3 well locations were assessed.

One five-point composite sample was collected from the site, and analytical testing was conducted to confirm remediation of oil-impacted soil based on LDNR Statewide Order 29B Closure Regulatory Limits. The analytical results met this limit, and the remediated facility surface was restored to its original grade.

START-2 conducted air monitoring during the removal activities, and no readings were recorded above background levels.

The EPA Task Monitor did not provide final approval of this report prior to the
completion date of the work assignment. Therefore, Weston Solutions, Inc. has
submitted this report absent the Task Monitor's approval.

FPNE03612 REMOVAL REPORT FPN E03612 The EPA Task Monitor has provided final approval of this report. Therefore,

Weston Solutions, Inc. has submitted this report with the Task Monitor's approval.

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1. INTRODUCTION

The Superfund Technical Assessment and Response Team (START-2) was tasked by the U.S. Environmental Protection Agency (EPA) Region 6 Response and Prevention Branch (EPA-RPB) under Contract Number 68-W-01-005 and Technical Direction Document (TDD) No. 06-03-03-0002 (Appendix K) to perform oversight, sampling, and site managerial tasks during the removal activities at the Trans Gulf Petroleum Corp. - Varner facility. The Trans Gulf Petroleum Corp. - Varner facility is located in DeSoto Parish, Louisiana, approximately 7.7 miles southwest of the town of Coushatta, Louisiana. A Site Area Map is provided as Figure 1-1. All figures are provided as separate portable document format (PDF) files. On 1 October 2003, START-2 initiated removal oversight activity at the Trans Gulf Petroleum Corp. - Varner site. START-2 has prepared this Removal Report to describe the technical scope of work that was completed.

The Trans Gulf Petroleum Corp. - Varner site was identified under the Louisiana Abandoned Oil Facility database as 16-E-1003, located within Section 34, Township 12 North, Range 11 West, DeSoto Parish, Louisiana. Figure 1-2 presents the Site Location Map. The geographic center of the site, Latitude 31.99139° North and Longitude 93.46584° West, was determined using a handheld Global Positioning System (GPS) receiver operated in autonomous mode. The reading was based on the North American Datum (NAD27 CONUS) with an estimated circular error of +/-15 meters.

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2. PURPOSE AND SCOPE

The purpose of the removal action at the Trans Gulf Petroleum Corp. - Varner site was to remediate oil-impacted soil, sludge, and other exploration and production (E&P) waste from the abandoned oil production facility to meet the closure requirements set forth in the Louisiana Department of Natural Resources (LDNR) Statewide Order 29B Regulations for Oilfield Waste Remediation (Appendix A).

The scope of work defined in the TDD includes documentation, sampling, and technical assistance. START-2 was specifically tasked to compile press clippings; to conduct air monitoring; to conduct oil spill response; to document the area and extent of the spill impact; to identify and document cause/probable cause; to maintain a site logbook; to monitor containment and cleanup action; to prepare a draft enforcement report; to prepare pollution reports (POLREPs); to prepare a Health and Safety Plan (HASP); to prepare an incident/trip report; to prepare maps and sketches; and to prepare a Quality Assurance Sampling Plan (QASP). In addition, START-2 was tasked to procure laboratory services; to provide a detailed diagram of the oil pathway; to provide print, slide, and digitized photographic documentation; to provide video documentation; to review background files; to review validation of analytical laboratory results; to review site records and technical documents; and to coordinate with LDNR, the Federal On-scene Coordinator (FOSC), and the Federal On-scene Coordinator's Representative (FOSC-R). The FOSC for the Trans Gulf Petroleum Corp. - Varner site was E. Wallace Cooper, and the FOSC-R was John Wheeler from the U.S. Army Corps of Engineers (USACE).

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Weston Solutions, Inc. - Trans Gulf Petroleum Corp. - Varner, DeSoto Parish, Louisiana

3. SITE BACKGROUND

Information regarding site location, background information, and site description is presented in

the following subsections.

3.1 LOCATION

The Trans Gulf Petroleum Corp. - Varner site is located in DeSoto Parish, Louisiana,

approximately 7.7 miles southwest of the town of Coushatta, Louisiana. The directions to the

facility from Shreveport, Louisiana, are as follows. From Shreveport, Louisiana travel U.S.

Interstate 49 south to exit 172. At exit 172, travel U.S. Highway 84 east for 0.5 mile to State

Highway 510. Turn right (south) on State Highway 510 and travel 8 miles to Ranch Road. Turn

right on Ranch Road, and travel 0.2 mile to the facility located on the right side of Ranch Road,

next to a property with a white doublewide manufactured home.

3.2 BACKGROUND INFORMATION

Background information about the Trans Gulf Petroleum Corp. - Varner site was derived from

the Ground Truth Survey (GTS) conducted by a USACE contractor in February 2003 (see

Appendix B).

Operator information was obtained from LDNR in Baton Rouge, Louisiana, and included the

following:

Operator:

Trans-Gulf Petroleum Corp.

P.O. Box 5355

Bossier City, LA 71171 Contact: William Sneed Operator Code: 6040

Land ownership information was obtained from the DeSoto Parish Tax Assessor's Office in

Mansfield, Louisiana.

Landowners:

Donald Powell

4630 Highway 510

Mansfield, LA 71052

Contact: Donald Powell

and

Anthony Valure 261 Valure Lane Mansfield, LA 71052

Contact: Anthony Valure

Donald Powell granted access to the site on 20 March 2003. A copy of the Site Access

Agreement is included in Appendix C.

3.3 SITE DESCRIPTION

The Trans Gulf Petroleum Corp. - Varner site is an abandoned oil production facility and

consisted of the following:

• One tank battery consisting of two aboveground storage tanks (ASTs), AST1 and

AST2, in a containment basin, CONT1.

■ Two pits, PIT1 and PIT2.

• Three orphaned well locations, with a work over rig attached to one of the well heads.

Additional associated piping.

Figures 3-1 and 3-2 present a Site Plan depicting these site features. Specific information

pertaining to the ASTs and production pits is located in Tables 4-1 and 4-2, respectively.

LDNR informed EPA of three production wells associated with the facility. Specific information

pertaining to the wells is located in Table 4-3.

Drainage from the facility routes approximately 100 feet southwest to Dolet Bayou. Dolet

Bayou flows into Jims River, Bayou Pierre, and into the Red River, which is navigable "in fact"

and subject to interstate commerce.

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4. ACTIONS TAKEN

Removal activities were initiated on 1 October 2003 and conducted under the direction of EPA

FOSC E. Wallace Cooper. USACE representative John Wheeler was the FOSC-R in charge of

operational oversight during the removal action. START-2 was responsible for documentation,

air monitoring, multimedia sampling, and technical assistance during the removal. The USACE

removal contractor was Shaw Environmental and Infrastructure, Inc. (Shaw) of Baton Rouge,

Louisiana. The removal contractor was responsible for the removal activities conducted at the

Trans Gulf Petroleum Corp. - Varner site. Removal activities included removal of the containers

and contents, remediation of oil-impacted soil in the containment basins and pits, and site

restoration.

In preparation for removal activities, START-2 prepared a HASP and a QASP. START-2 and

USACE created Daily Progress Reports that contain specific daily tasks (see Appendices D and

E, respectively). POLREPs summarized weekly progress of the activities conducted at the site

(Appendix F). Digital photographs taken at the site are included in Appendix G, and START-2

logbook notes are provided in Appendix H. Copies of the waste manifests are provided in

Appendix I.

On 1 October 2003, Shaw began removal activities at the Trans Gulf Petroleum Corp. - Varner

site. Multiple removal tasks often occurred at the same time; therefore, many of the removal

tasks that were performed sequentially had overlapping dates of operation.

The equipment was mobilized to the facility. Vegetation was cleared and grubbed from around

the CONT1 tank battery and Varner well No. 001 located just north of the tank battery.

Associated pipe from around the tank battery was cut, gathered, and stockpiled.

A total of 130 barrels of saltwater and 145 barrels of tank sludge was pumped and removed from

the facility storage tanks and transported off-site for disposal. AST1 and AST2 were dismantled,

pressure washed, placed in a 40-cubic yard rolloff box, and transported off-site for recycling.

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From CONT1, 26 cubic yards of oil-impacted soil was excavated and transported off-site for disposal. The CONT1 excavation was backfilled with clean surrounding soils and graded to the natural drainage slope. The site access road was restored.

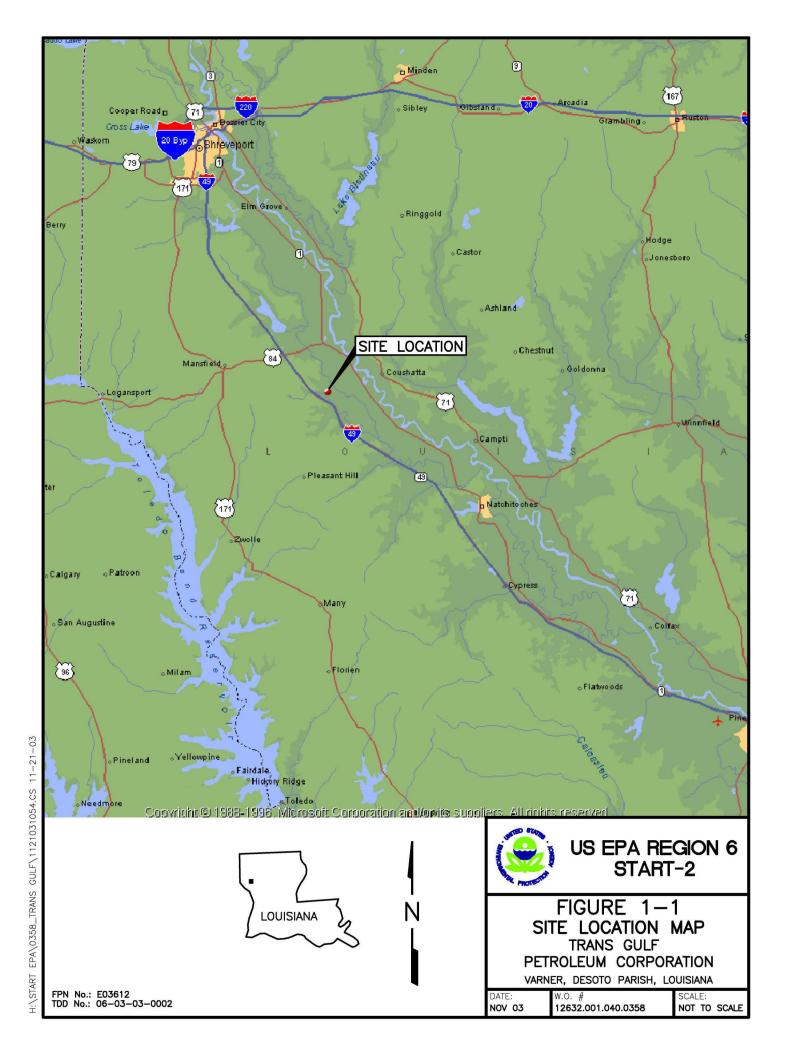
On 14 October 2003, Shaw completed site restoration and demobilized from the site.

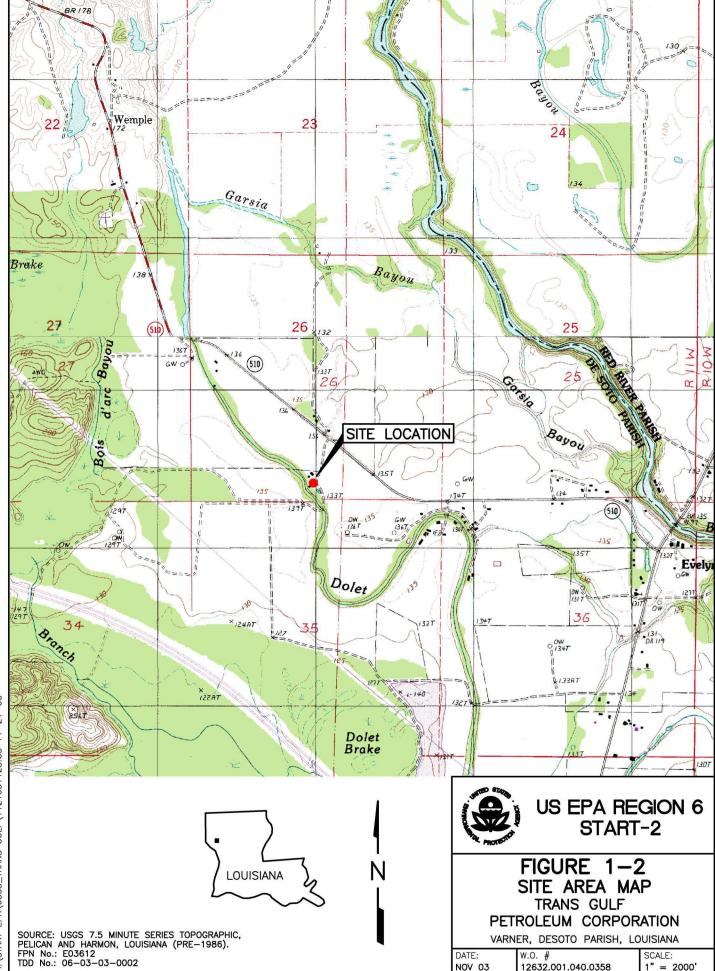
Three wells associated with the facility were assessed, but not plugged, during the removal action. Specific information pertaining to the wells is located in Table 4-3.

During the removal action, Bear Creek Environmental Systems loaded and transported 130 barrels of saltwater and 85 barrels of oil and sludge from the ASTs off-site to U.S. Liquids for disposal. Mussop, Inc. loaded and transported 60 barrels of oil and sludge from the ASTs offsite for disposal. Murphy Brothers Trucking, Inc. loaded and transported 26 cubic yards of oilimpacted soil from CONT1 off-site for disposal. A manifest summary is provided in Table 4-4. Alexandria Iron from Alexandria, Louisiana, loaded and transported one 40-cubic yard rolloff box of facility scrap metal off-site for recycling.

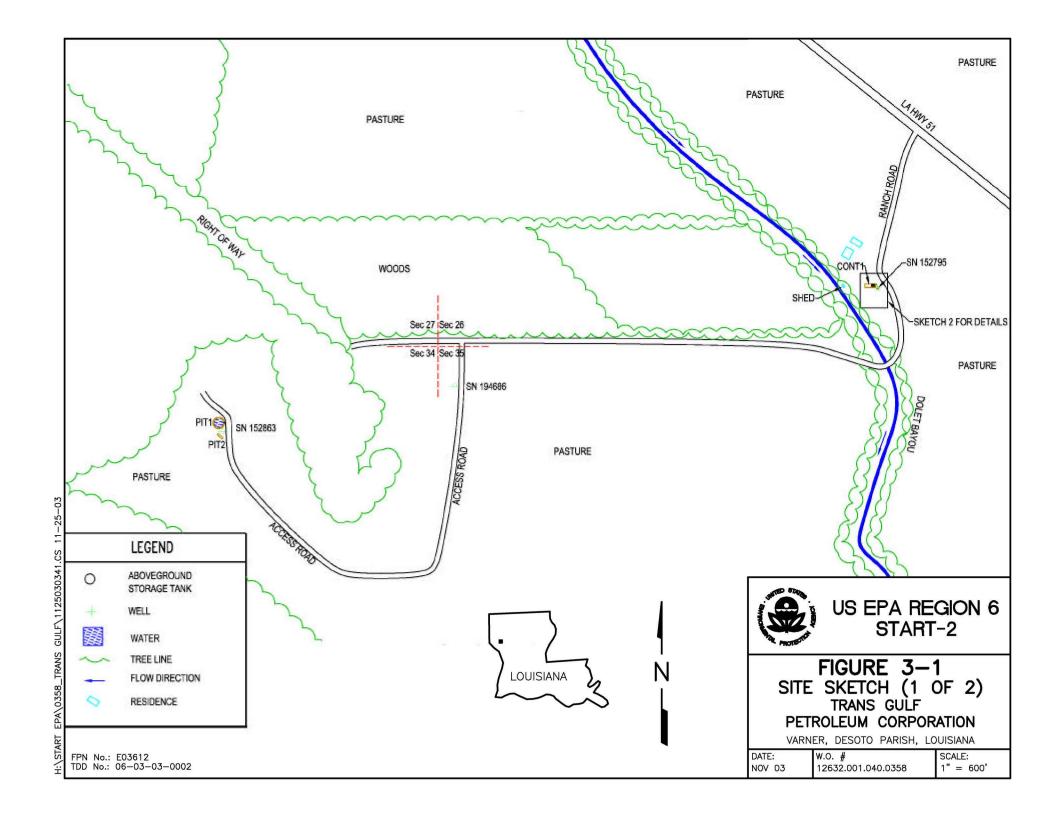
START-2 collected one five-point confirmation sample from the excavation surface of CONT1. The sample was less than 1% oil/grease as required by LDNR Statewide Order 29B. Analytical results are found in Appendix J.

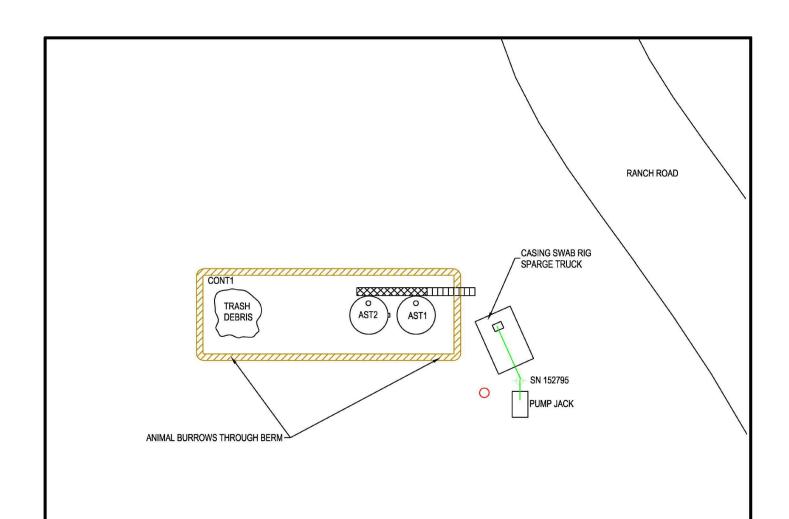
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FIGURE 3-2 SITE SKETCH (2 OF 2) TRANS GULF

PETROLEUM CORPORATION VARNER, DESOTO PARISH, LOUISIANA

DATE: NOV 03

12632.001.040.0358

1' = 25'

Table 4-1

Container Status Table

SITE NAME:	TRANS GULF PE	TROLEUM CORI	P. – VARNER			FPN – E03612	
CONTAINER ID	CONSTRUCTION & CAPACITY	RADIATION/AIR MONITORING	CONTENTS (OIL, WATER, AND/OR SLUDGE)	QUANTITY REMOVED	DATE DISMANTLED	DATE DECONTAMINATED	TRANSPORTED OFF-SITE FOR RECYLING
AST1	Cylindrical, Single-wall Steel, Welded; 210 BBL ⁽¹⁾	Checked for NORM ⁽²⁾ on 10/7/2003; All Readings at Background Levels, 5-6 µR/hr ⁽³⁾	130 BBL of Saltwater and 70 BBL of Oil/Sludge	130 BBL of Saltwater and 70 BBL of Oil/Sludge Removed Off-Site for Disposal	10/8/2003	10/8/2003	10/9/2003
AST2	Cylindrical, Single-wall Steel, Welded; 210 BBL	Checked for NORM on 10/7/2003; All Readings at Background Levels, 5-6 µR/hr	30 BBL of Oil/Sludge	30 BBL of Oil/Sludge Removed Off-Site for Disposal	10/8/2003	10/8/2003	10/9/2003
TOTAL VOLUME OF LIQUID REMOVED (BBL): 130 barrels of saltwater, 145 barrels of oil/sludge removed off-site as production tank sludge; 45 barrels of the 145 barrel total was removed from tank on rig truck at well Varner No. 1 and from the three diesel tanks that were uncovered during clearing and grubbing operations.				DISPOSAL FACI	ILITY (CITY AN	ND STATE): U.S. Liquids	In Elm Grove, LA
TOTAL VOLU	ME OF SOLID REM	OVED (CUBIC YAR	DS): N/A	DISPOSAL FACI	ILITY (CITY AN	ND STATE): N/A	
TOTAL VOLUME OF SCRAP METAL REMOVED: One 40-yd ³ rolloff box loaded and removed on 10/09/2003							

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 $^{^{(1)}}BBL = barrel \\ ^{(2)}NORM = naturally occurring radioactive materials \\ ^{(3)}\mu R/hr = microroentgen per hour$

Table 4-2
Production Pit Status Table

SITE NAM	E: TRANS GULI	F PETROLEU	M CORP VAR		FPN – E03612			
PIT NUMBER	LENGTH X WIDTH X DEPTH (ft)	CAPACITY (BBL)	GTS OIL/GREASE	QUANTITY REMOVED (yd³/BBL)	DATE STARTED/ DATE COMPLETED	TASKS PERFORMED	CONF. RES. %	GPS COORDINATES
CONT1	69 x 24 1.5	440	1.7	26 yd ³	10/8/2003 to 10/14/2003	Oil-Impacted Material Excavated, Stockpiled, and Transported Off-Site For Disposal; 5-Point Confirmation Sampled Collected From Excavation Floor; Excavation Backfilled and Graded to Natural Grade.	0.02	Lat 31.99139° North Long 93.46584° West
PIT1	30 ft Diameter x 3.5 ft Depth	440	N/A	N/A	N/A	PIT1 Was Not Part of the Scope of Work; Will Be Addressed During Well Plugging and Abandonment (P&A) Operations At Varner Well NO. 2; SN: 152863	N/A	Lat 31.98897° North Long 93.47894° West
PIT2	40 X 10 X 1.5	110	N/A	N/A	N/A	PIT2 Was Not Part of the Scope of Work; Will Be Addressed During Well Plugging and Abandonment Operations At Varner Well NO. 2; SN: 152863	N/A	Lat 31.98897° North Long 93.47894° West
TOTAL VOLUM	TOTAL VOLUME OF LIQUID REMOVED (BBL): N/A, containment basin and pits were dry.					TY (CITY AND STATE): N/A		
TOTAL VOLUM	IE OF SOLID REMOV	ED (CUBIC YARDS): 26 yd³removed at produ	action pit sludge.	DISPOSAL FACILIT	Y (CITY AND STATE): U.S. Liqu	ids at Elm Gro	ve, Louisiana

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Table 4-3

Well Status Table

SITE NAME:	TRANS GULF F	FPN - E03612			
WELL NAME	WELL NUMBER	LDNR SERIAL #	DEPTH (ft)	WELL CONDITION (LEAKING, SUBMERGED WATER, etc.)	O, IN GPS COORDINATES
VARNER	001	152795	2,980	Attached to Work Over Rig: Scheduled For P&A by L	Lat 31.99156° North Long 93.46572° West
VARNER	002	152863	2,875	Not Located During Remedial Action: Located in We and Thorns Head High, and Located on Land With Written Access Agreement; Scheduled for P&A by Ll	No Lat 31.9889/* North
VARNER	003	194686	2,990	Not Located During Remedial Action: Located in We and Thorns Head High, and Located on Land With Written Access Agreement; Scheduled for P&A by Ll	No Lat 31.98983 North

Table 4-4

Manifest Summary

DATE	TIME	SOURCE	ТҮРЕ	QUANTITY	MANIFEST NUMBER	HAUL CONTRACTOR	DESTINATION
10/7/2003	1000	AST1	Saltwater	130 BBL	2799390	Bear Creek Environmental Systems	U.S. Liquids, Elm Grove, LA
10/7/2003	1320	AST1, Diesel Tanks, Tank on Rig Truck	Production Tank Sludge	85 BBL (40 BBL From AST1 and 45 BBL From Diesel Tanks and Rig Tank)	2799388	Bear Creek Environmental Systems	U.S. Liquids, Elm Grove, LA
10/7/2003	1400	AST1, AST2	Production Tank Sludge	60 BBL (30 BBL From AST1 and 30 BBL From AST2)	2799389	Mussop, Inc.	U.S. Liquids, Elm Grove, LA
10/8/2003	1040	CONT1	Production Pit Sludge	62.4 BBL (13 yd³)	2799386	Murphy Bros. Trucking, Inc.	U.S. Liquids, Elm Grove, LA
10/8/2003	1055	CONT1	Production Pit Sludge	62.4 BBL (13 yd³)	2799387	Murphy Bros. Trucking, Inc.	U.S. Liquids, Elm Grove, LA

5. LIST OF APPENDICES

Appendix A	Louisiana Department of Natural Resources (LDNR)-Office of Conservation
	General Operations: Subpart 1. Statewide Order No. 29B (Regulations for
	Oilfield Waste Remediation)

- Appendix B USACE Contractor Ground Truth Survey (GTS)
- Appendix C Site Access Agreement
- Appendix D START-2 Daily Progress Reports
- Appendix E U.S. Army Corps of Engineers (USACE) Daily Reports
- Appendix F Final Pollution Reports (POLREPs)
- Appendix G Digital Photographs
- Appendix H Copy of START-2 Logbook
- Appendix I Waste Manifests
- Appendix J Analytical Laboratory Reports
- Appendix K Copy of TDD No. 06-03-03-0002

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Title 43 NATURAL RESOURCES

Part XIX. Office of Conservation—General Operations

Subpart 1. Statewide Order No. 29-B

Chapter 1. General Provisions

§101. Definitions

Unless the context otherwise requires, the words defined in this Section shall have the following meanings when found in this order:

Department—the Department of Conscrvation of the state of Louisiana.

District Manager—the head of any one of the districts of the state under the Division of Minerals, and as used, refers specifically to the manager within whose district the well or wells are located.

Agent—the director of the Division of Minerals, the chief engineer thereof, or any of the district managers or their aides.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et sea.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§103. Application to Drill

- A. All applications for permits to drill wells for oil or gas or core test wells below the fresh water sands shall be made on Form MD-10-R or revisions thereof, and mailed or delivered to the district office. These applications, in duplicate, shall be accompanied by three copies of the location plat, preferably drawn to a scale of 500 feet to the inch. The plats shall be constructed from data compiled by a registered civil engineer or surveyor and shall definitely show the amount and location of the acreage with reference to quarter-section corners, or other established survey points. There shall also be shown all pertinent lease and property lines, leases and offset wells. When the tract to be drilled is composed of separately-owned interests which have been pooled or unitized, the boundaries to and the acreage in each separately-owned interest must be indicated. Plats must have well locations certifications either written on or attached to the well location plats and this certification must be signed by a registered civil engineer, qualified surveyor or a qualified engineer regularly employed by the applicant. If possible the application card shall give the name and address of the drilling contractor, otherwise the information, as soon as determined, shall be supplied by letter to the district manager.
- B. When dual completion applications are granted, each well shall be considered as two wells. The production from each sand shall be run through separate lead lines and the production from each sand shall be measurable separately.

The department's agent shall designate suitable suffices to the well number which will serve as reference to each producing sand.

- C. No well shall be drilled, nor shall the drilling of a well be commenced, before a permit for such well has been issued by the Department of Conservation; furthermore, any work, such as digging pits, erecting buildings, derricks, etc., which the operator may do or have done, will be done at his own risk and with the full understanding that the Department of Conservation may find it necessary to change the location or deny the permit because of the rules and regulations applying in that instance.
- D. No well shall commence drilling below the surface casing until a sign has been posted on the derrick, and subsequently on the well if it is a producer, showing the ownership and designation of the well, name of lease, section, township, range, and the serial number under which the permit was issued. The obligation to maintain a legible sign remains until abandonment.

In order to make the designation of the well, as referred to above, more uniform throughout the state, and thus to facilitate the handling of all matters relative to any particular well, the following system of rules has been developed for use in the naming of wells in the future in Louisiana:

- 1. In no case shall any operator name or well name exceed 30 characters. A space is equivalent to one character.
- a. Abbreviations shall be used whenever possible to comply with the above. It is recommended that S be used for sand and U for unit.
- b. The official well name appearing on Form MD-10-R (Application to Drill) shall be used when reporting on all Department of Conservation forms and also in any correspondence.
- 2. Lease Wells. All wells drilled on a lease basis shall bear the lessor's surname and initials or given name.

Example: Lease Name Well Number

J. R. Smith Number 2

- 3. The commissioner shall prescribe or cause to have prescribed the procedure for assigning well and/or nomenclature and shall issue a memorandum concerning same from time to time as the need arises.
- a. Developmental units proposed at a hearing shall be named in accordance with the latest memorandum, and the well number shall depend on whether or not there are any other wells in existence on the lease.

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- b. Any unit maps filed with an application for hearing must reflect proposed unit names in accordance with the latest memorandum.
- 4. Units with Alternate Unit Wells. For those cases where more than one well serves the same proration unit, the wells shall be named in accordance with the latest memorandum, and the well number shall be followed by the letters ALT in the case of each alternate well.

Example: Lease Name Well Number

Hayes Sue; J. R. Smith Number 1

Hayes Sue; Dave Luke Number 1 ALT

Hayes Sue; St. Mary Number 22 ALT

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et sea.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (August 1958), (August 1961), (May 1973).

§105. All Other Applications

- A. All applications for permits to repair (except ordinary maintenance operations), abandon (plug and abandon), acidize, deepen, perforate, perforate and squeeze, plug (plug back), plug and perforate, plug back and side-track, plug and squeeze, pull casing, side-track, squeeze, squeeze and perforate, workover, cement casing or liner as workover feature, or when a well is to be killed or directionally drilled, shall be made to the district office on Form MD-11-R and a proper permit shall be received from the district manager before work is started. A description of the work done under the above recited work permits shall be furnished on the reverse side of the Well History and Work Resume Report (Form WH), which form shall be filed with the district office of the Department of Conservation in which the well is located within 20 days after the completion or recompletion of the well. At least 12 hours prior notice of the proposed operations shall be given the district manager and/or an offset operator in order that one of them may witness the work. If the district manager fails to appear within 12 hours. the work may be witnessed by the offset operator, but failing in this, the work need not be held up longer than 12 hours. This rule shall not deter an operator from taking immediate action in an emergency to prevent damage.
- B. When a service company, other than the drilling contractor, cements, perforates or acidizes, either before or after completion of a well, the service company shall furnish the district manager with legible exact copies of reports furnished the owner of the well.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (August 1958).

§107. Records

- A. The district office shall be supplied with available field maps showing lease lines and well locations for all producing areas within the district, such maps to be provided by persons or companies operating in the field, on request of the commissioner or his agent.
- B. Electrical logs, when run, of all test wells, or wells drilled in search of oil gas sulphur and other minerals, shall be mailed in duplicate to the district office of the Department of Conservation in which the well is located, such copies to be mailed within 10 days after completion of the well. These logs shall be filed on the following scales:
 - 1. all north Louisiana districts:

normal log-two inches to 100 feet.

2. all south Louisiana districts:

normal log-one inch to 100 feet;

detailed log-five inches to 100 feet.

- C. The service company running the electric log on the well shall include as a part of the information on the log the permit serial number of the well.
- D. A new form entitled "Well History and Work Resume Report" (Form WH) shall be filed with the district office in which the well is located within 20 days after completion of the well. This report shall be filed on forms furnished by the Department of Conservation or on like forms as reproduced by the operator.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (August 1958).

§109. Casing Program

A. Conductor Pipe. Conductor pipe is that pipe ordinarily used for the purpose of supporting unconsolidated surface deposits. The use and removal of conductor pipe during the drilling of any oil and gas well shall be at the option of the operator.

B. Surface Casing

1. Where no danger of pollution of fresh water sources exists, the minimum amount of surface of first-intermediate casing to be set shall be determined from Table 1 hereof:

		Table 1	
Total Depth of Contact	Casing Required	Number of Sacks Cement	Surface Casing Test Pressure (lbs. per sq. in.)
0-2500	100	200 or circulate to surf*	300
2500-3000	150	500 "	600
3000-4000	300	500 "	600
4000-5000	400	500 "	600
5000-6000	500	500 "	750
6000-7000	800	500 "	1000
7000-8000	1000	500 "	1000
8000-9000	1400	500 "	1000
9000-Deeper	1800	500 "	1000

*Circulate to the Surface shall mean the calculated amount of cement necessary to fill the theoretical annular space plus 10 percent.

In known low-pressure areas, exceptions to the above may be granted by the commissioner or his agent. If, however, in the opinion of the commissioner, or his agent, the above regulations shall be found inadequate, and additional or lesser amount of surface casing and/or cement or test pressure shall be required for the purpose of safety and the protection of fresh water sands.

- 2. Surface casing shall be tested before drilling the plug by applying a minimum pump pressure as set forth in Table 1 after at least 200 feet of the mud-laden fluid has been displaced with water at the top of the column. If at the end of 30 minutes the pressure gauge shows a drop of 10 percent of test pressure as outlined in Table 1, the operator shall be required to take such corrective measures as will insure that such surface casing will hold said pressure for 30 minutes without a drop of more than 10 percent of the test pressure. The provisions of Subsection D.7, below, for the producing casing, shall also apply to the surface casing.
- 3. Cement shall be allowed to stand a minimum of 12 hours under pressure before initiating test or drilling plug. Under pressure is complied with if one float valve is used or if pressure is held otherwise.

C. Intermediate Casing

- 1. Intermediate casing is that casing used as protection against caving of heaving formations or when other means are not adequate for the purpose of segregating upper oil, gas or water-bearing strata.
- 2. If an intermediate casing string is deemed necessary by the district manager for the prevention of underground waste, such regulations pertaining to a minimum setting depth, quality of casing, and cementing and testing of sand, shall be determined by the department after due hearing. The provisions of Subsection D.7 below, for the producing

casing, shall also apply to the intermediate casing.

D. Producing Oil String

- 1. Producing or oil string is that casing used for the purpose of segregating the horizon from which production is obtained and affording a means of communication between such horizons and the surface.
- 2. The producing string of casing shall consist of new or reconditioned casing, tested at mill test pressure or as otherwise designated by the department and set at a sufficient depth to cut off all gas formations above the oil-saturated horizon in which the well is to be completed. The position of the oil horizon shall be determined by coring, testing or electrical logging, or other satisfactory method, and the producing string of casing shall be bottomed and cemented at a point below the gas/oil contact if determinable and practicable.
- 3. Cement shall be by the pump-and-plug method, or another method approved by the department. Sufficient cement shall be used to fill the calculated annular space behind the casing to such a point, as in the opinion of the district manager, local conditions require to protect the producing formations and all other oil and gas formations occurring above, but in every case, no less cement shall be used than the calculated amount necessary to fill the annular space to a point 500 feet above the shoc.
- 4. The amount of cement to be left remaining in the casing, until the requirements of Paragraph 5 below have been met, shall be not less than 20 feet. This shall be accomplished through the use of a float-collar, or other approved or practicable means, unless a full-hole cementer, or its equivalent, is used.
- 5. Cement shall be allowed to stand a minimum of 12 hours under pressure and a minimum total of 24 hours before initiating test or drill plug in the producing or oil string. Under pressure is complied with if one or more float valves are employed and are shown to be holding the cement in place, or when other means of holding pressure is used. When an operator elects to perforate and squeeze or to cement around the shoe, he may proceed with such work after 12 hours have elapsed after placing the first cement.
- 6. Before drilling the plug in the producing string of casing, the casing shall be tested by pump pressure, as determined from Table 2 hereof, after 200 feet of mud-laden fluid in the casing has been displaced by water at the top of the column.

Table 2. Intermediate and Producing Casing					
String Pressure Depth Set	No. of Sacks of Cement	Producing Test (lbs. per sq. in.)			
2000-3000'	200*	800			
3000-6000'	300*	1000			
6000-9000'	500*	1200			
9000-and deeper	500*	1500			

* But in every case no less cement shall be used than the calculated amount necessary to fill the annular space to a point 500' above the shoc.

If at the end of 30 minutes the pressure gauge shows a drop of 10 percent of the test pressure or more, the operator shall be required to take such corrective measures as will insure that the producing string of casing is so set and cemented that it will hold said pressure for 30 minutes without a drop of more than 10 percent of the test pressure on the gauge.

- 7. If the commissioner's agent is not present at the time designated by the operator for inspection of the casing tests of the producing string, the operator shall have such tests witnessed, preferably by an offset operator. An affidavit of test, on the form prescribed by the Department of Conservation, signed by the operator and witness, shall be furnished to the district office of the Department of Conservation showing that the test conformed satisfactorily to the above mentioned regulations before proceeding with the completion. If test is satisfactory, normal operations may be resumed immediately.
- 8. If the test is unsatisfactory, the operator shall not proceed with the completion of the well until a satisfactory test has been obtained.

E. Tubing and Completion

- 1. A valve, or its equivalent, tested to a pressure of not less than the calculated bottomhole pressure of the well, shall be installed below any and all tubing outlet connections.
- 2. When a well develops a casing pressure, upon completion, equivalent to more than three-quarters of the internal pressure that will develop the minimum yield point of the casing, such well shall be required by the district manager to be killed, and a tubing packer to be set so as to keep such excessive pressure of the casing.
- 3. When a well develops a casing pressure, upon completion, equivalent to more than three-quarters of the internal pressure that will develop the minimum yield point of the casing, such well shall be required by the district manager to be killed, and a tubing packer to be set so as to keep such excessive pressure of the casing.
- F. Wellhead Connections. Wellhead connections shall be tested prior to installation at a pressure indicated by the district manager in conformance with conditions existing in areas in which they are used. Whenever such tests are made in the field, they shall be witnessed by an agent of the department. Tubing and tubingheads shall be free from obstructions in wells used for bottomhole pressure test purposes.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Promulgated by the Department of Conservation (August 1943), amended (February 1951), (August 1958), amended by the Department of Natural Resources, Office of Conservation, LR 25:1523 (August 1999).

§111. Blowout Preventers

All wells drilling or running casing or tubing are to be equipped with a master gate and a blowout preventer having the correct size rams or plugs installed and in first class condition, together with a flowing valve of the recommended size and working pressure. If a fill-up line is connected to the blowout preventer, the line shall be equipped with such valves and fittings of at least the same working pressure as the blowout preventer. If the preventer is hydraulically operated, adequate pressure shall at all times be available for efficient operations.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§113. Casing-heads

All wells shall be equipped with casing-heads with a test pressure in conformance with conditions existing in areas in which they are used. Casing-head body, as soon as installed shall be equipped with proper connections and valves accessible to the surface. Reconditioning shall be required on any well showing pressure on the casing-head, or leaking gas or oil between the oil string and next larger size casing string, when, in the opinion of the district managers, such pressure or leakage assume hazardous proportions or indicate the existence of underground waste. Mud-laden fluid may be pumped between any two strings of casing at the top of the hole, but no cement shall be used except by special permission of the commissioner or his agent.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§115. Fire Hazards

- A.l. All wells shall be cleaned into a pit, barge, or tank, located at a distance of at least 100 feet from any fire hazard.
- 2. Before any well shall be perforated, the drilling fluid in the well shall be conditioned and brought to a weight necessary to hold the normal hydrostatic pressure at the point to be perforated with a reasonable margin of safety; provided, however, in cases where the tubing and Christmas tree are set for production, the weight of the drilling fluid may be reduced below that weight necessary to hold the normal hydrostatic pressure at the point to be perforated. Before perforating, proper connections for lubricating the gun in and out of the hole shall be installed.
- 3.a. All drill stem tests shall be started and completed during daylight hours, except in fields where from bottomhole pressures and other information it is known that the pressure does not exceed the pressure of a column of oil from top to hole to the producing horizon. Started and Completed shall mean the opening and the closing of the drill-stem testing tool valve or valves controlling the flow through the choke.

- b. In the absence of special prior permission from the department, no drill-stem test shall be conducted with chokes larger than ¼ inch on both top and bottom.
- 4. All wells shall be swabbed or bailed during the daylight hours except in cases of low pressure wells as Paragraph 3 above.
- B. No boiler, open fire, or electric generator shall be operated within 100 feet of any producing oil or gas well, or oil tank.
- C.1. Each permanent oil tank or battery of tanks that are located within the corporate limits of any city, town or village, or where such tanks are closer than 500 feet to any highway or inhabited dwelling or closer than 1000 feet to any school or church, or where such tanks are so located as to be deemed a hazard by the commissioner of Conservation, must be surrounded by a dike (or firewall) or retaining wall of at least the capacity of such tank or battery of tanks, with the exception of such areas where such dikes (or firewalls) or retaining walls would be impossible such as in water areas. At the discretion of the commissioner of Conservation, firewalls of 100 percent capacity can be required where other conditions or circumstances warrant their construction.
- 2. In water, swamp or marsh areas, where the building of firewalls is impossible or impracticable, in the future, permanent tanks shall be placed on an impervious platform surrounded by a metal gutter to catch all the oil and other wastes which may cause either a fire-hazard or pollution. A sump shall be provided to catch the run-off from the gutters; however, if the operator or company has devised a plan which serves the same purpose, the district manager may after being presented with the plan, waive the above requirements.
- 3. Tanks not falling in the above categories (Paragraphs 1 and 2) must be surrounded by a retaining wall, or must be suitably ditched to a collecting sump, each of sufficient capacity to contain the spillage and prevent pollution of the surrounding areas.
- D. All gas vents from oil tanks shall terminate outside of the firewall.
- E. Any rubbish or debris that might constitute a fire hazard shall be removed to a distance of at least 100 feet from the vicinity of wells, tanks, and pump stations. All waste shall be burned or disposed of in such a manner as to avoid creating a fire hazard or polluting streams and fresh water strata.
- F. Each operator shall so conduct his operations and maintain his equipment as to reduce to a minimum the danger of explosion or fire, and consequent waste.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (March 1955), (December 1963).

§117. Drilling Fluids

The inspectors and engineers of the Department of Conservation shall have access to the mud records of any drilling well, except those records which pertain to special muds and special work with respect to patentable rights, and shall be allowed to conduct any essential test or tests on the mud used in the drilling of a well. When the conditions and tests indicate a need for a change in the mud or drilling fluid program in order to insure proper control of the well, the district manager shall require the operator or company to use due diligence in correcting any objectionable conditions.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§119. Well Allowables and Completion

- A. New Well and Recompleted Well Allowables
- 1. Upon completion or recompletion of a well, immediate notice within 24 hours from the time of completion (Sundays and holidays excepted) must be filed in writing with the district office on forms provided by the department. Notice of completion or recompletion of a well may be made by telephone or telegram to the district manager if supplemented by written notice on proper form within three days from the date of completion or recompletion. Wells shall be considered completed when turned into the tanks. A potential and gas/oil ratio test shall then be conducted by the operator or company, and witnessed by an inspector of the department within five days from the date of completion or recompletion (Sundays and holidays excepted.)
- 2. After receipt of the completion reports and reports or tests required by the commissioner, a completed or recompleted well shall be given a daily allowable, determined in the same manner as was used in computing the schedule of daily allowables for the months in which such completion is made.
- 3. The daily well allowable when determined shall be effective from 7 a.m. on the date of completion or recompletion if the well is completed or recompleted before 7 p.m.; and from 7 a.m. of the following day if the well is completed or recompleted after 7 p.m.; provided the completion or recompletion report has been filed in accordance with the above-mentioned provisions, and if the initial potential and gas/oil ratio test has been made within five days from the date of completion or recompletion.

If the completion or recompletion is not reported as provided, then the daily well allowable shall be effective from the date of receipt of the completion or recompletion report, with a one-day tolerance. If the initial potential and gas/oil ratio test is not made within five days from the date of completion or recompletion, the daily well allowable shall be effective as of the date of request by the operator for an inspector of the department to witness the said test.

B. Allowables given to wells for oil produced on drillstem tests, production test and any miscellaneous production of oil shall be in accordance with the following rule:

All operators are required, within five days, to file three signed copies of the records of the daily production from the well, showing the number of hours the well produced and the interval of production; as from 8 a.m., August 5 to 3 p.m., August 8, 1941.

- C. All leases are to be so equipped as to permit the determination of gas/oil ratios on individual flowing and gas-lift wells. Gas/oil ratio data on all wells shall be available to the inspector of the department at all times.
- D. No flowing and/or gas-lift oil wells shall be permitted to produce with excessive gas/oil ratio, except where special orders are operative. Wells that are gas/lifted with gas from gas wells shall be prorated in the same manner as are hi-ratio naturally flowing oil wells, the G.O.R. being defined for this purpose as the total output gas less the total input gas divided by the number of barrels of oil produced. The uneconomic or unreasonable use of gas for gas-lift will not be permitted.
- E.I. Each lease shall be provided with sufficient tankage or meters to permit proper gauging of the oil produced. The tanks or meters must be identified by a sign showing the ownership of the tanks or meters and name of the lease from which the oil is being produced. In no case shall meters be the sole means of measuring oil runs from any field. There must be used at least one gauge tank to check the reading of meters. Applications for the use of oil meters in lieu of gauge tanks, shall be the subject of open hearings until rules are formulated.
- 2. All flowing and gas-lift oil wells are to be produced through efficient operating separators, except in the case of low-pressure headings of gas-lift wells with low-gas output.
- 3. All oil meters and bypass settings shall be provided with the necessary connections to permit the installation of seals and such seals shall be affixed by the operator. A record shall be kept on file and available for inspection by any agent of the department or any party at interest for a period of not less than three years, which reflects the oil meter seal number, the date and time the oil meter is sealed, the date and time the seal is broken and the reason for breaking the seal. To obviate the necessity of affixing oil meter seals, oil meters with nonresettable counters may be used.
- 4. When it becomes necessary to use a bypass or other flowline connection which the operator has been required to seal or which has been sealed by the department, permission to use same must be obtained from the district manager. In the event that an unforeseen emergency requires the use of bypass or flowline connections before notification to the district office, a detailed, written report, in duplicate, setting forth the occasion for such action must be given, and the bypass or other connection shall forthwith be resealed.
 - F. In the event that any operator considers that his well

- has not had a fair determination of its gas/oil ratio, or that its gas/oil ratio has changed due to natural causes or to corrective work on his well, he may make application in writing to the district manager for a retest or a special test of the gas/oil ratio of his well, and for an adjustment of the allowable of his well. If, upon retesting a well, the district manager finds that the new gas/oil ratio justifies a change in the allowable, he is authorized to make such change.
- G. Changed or corrected allowable shall be effective from the date of completion of such work, but in no case shall the effective date be before the date of request by the operator to the district manager for a retest or a special test.
- H. Gas wells shall not be tested by the open-flow method. The back-pressure method of determining the open flow, as outlines by the Bureau of Mines in their Monograph 7, "Back Pressure Data on Natural Gas Wells", shall be used. When, for any reasons, the back-pressure method is not feasible, an acceptable method, not entailing excessive physical waste of gas, may be used, upon recommendation of the technical staff of the department.
- I. It is recognized that wells capable of producing their daily oil allowable may underproduce one day and overproduce another day during the period of an allowable schedule; however, such deficiencies as occur in this manner may be made up by excess production from the same well on the succeeding days during the period of that schedule, or such overproduction may be adjusted by underproduction on the succeeding days during the period of that schedule; provided, however, that no well shall produce in any one calendar month more than the total daily allowable per well multiplied by the total number of days in the calendar month; however, in order to provide working stocks of oil and to facilitate the production and gathering of oil including testing, bottomhole pressure survey, et cetera, the production and possession of a quantity of oil in the lease storage not exceeding three days current allowable production for the lease at the end of the month in excess of the total monthly allowables, as determined in accordance with the provisions of the production and proration order, shall not be construed to be a violation of said order.

The authorization of production and possession of a quantity of oil not exceeding three days current allowable production shall not be construed to be the granting of authority to any operator to offer to a market, or market, or any transporter to transport any quantity of oil in excess of the quantity specifically determined to be the total monthly allowable for each respective lease whose allowable shall have been determined by the summation of the monthly quantities determined by the multiplication of the quantity shown in the allowable schedule times the days of the month for which said allowable is effective plus or minus any allowable additions or cancellations multiplied by the days which either or both may be effective during the period covered by the schedule.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (January 1963). (June 1969).

§121. Production, Production Records, Production Tests

- A. All oil tendered to any transportation system shall be gauged and tested for B.S. & W. and temperature. For each and every transfer of oil from the lease tanks, the number of the on-seal and off-seal observed temperature, and the percent of B.S. & W. shall be recorded on each and every run ticket, and each party of any transfer of oil from lease tanks shall receive a copy of the run or delivery ticket or tickets.
- B.1. There shall not be any simultaneous movement of oil into and out of any lease tank that is being used for delivering oil to a gatherer or transporter. Transfer of oil or gas from the possession of one lease to the possession of another lease, except when properly accounted for, is hereby prohibited.
- 2. The possession of improper mechanical means for transferring oil from one lease tank or well to the lease tank or well of another lease is hereby prohibited.
- 3. All pipeline outlets from lease tanks shall be kept sealed at all times except when a pipeline run is being made from the tank, and the number of the on-seal and off-seal shall be recorded on each and every run ticket.
- 4. B.S. & W. bleed-off lines of lease tanks shall be sealed or locked at the time any pipeline run is being made.
- 5. Oil produced from separately-owned leases, not pooled, unitized or consolidated shall not be commingled in lease tanks.
- 6. All leases having more than one producing well shall be equipped with a test line, so as to obviate the necessity of spudding in wells when taking individual well tests.
- C. Producers shall keep the following records in the main office for a period of three years and the current records in the field office for three months:
- 1. the monthly production in gross barrels produced from each lease and tank into which the oil was produced. A record of choke, percent B.S. & W., tubing pressures, and casing pressures of each oil well on that particular lease shall be recorded on a monthly basis, and if a choke is changed, the date of such change shall be recorded on the monthly record. If a well is put on production, either initially or returned to production after cessation of production, during the monthly period preceding the date of the record, the date the well was put on production shall also be recorded on the monthly record;
- 2. a record of stock on hand on the first day of each month;
- 3. a record of all deliveries of oil from the lease, to whom made, and the identity of the means of transportation, and the transporter; and

- 4. gauge tickets, and run tickets, as made by the employees actually performing or directing the operations recorded on such records.
- D.1. Every producer shall make and report to the district managers production tests of each of his oil wells by the 10th of February, April, June, August, October and December. The data collected shall include the daily rate of production, size choke, percent B.S. & W., tubing pressure, casing pressure, gravity at 60° Fahrenheit, or observed gravity and temperature, gas/oil ratio and volume of gas produced, which shall be recorded on the daily gauge report on or before the above date. A signed record of such tests shall be filed with the district manager.
- 2. When any well or wells shall go off production other than because of ordinary maintenance operations, same shall be reported to the district office immediately and a letter of cancellation of allowable for that well shall be issued.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seg.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (January 1963), (July 1959).

§123. Oil and Gas Measurements

- A. Quantities of oil shall be computed from correctly compiled tank tables and no deduction shall be taken therefrom. Corrections shall be made for temperature to the basis of 60° Fahrenheit in accordance with Table 6 in ASTM Designation: D 1250 IP Designation: 200. The full per centum of B.S. and W. as shown by the centrifugal or other tests shall be deducted after making correction for temperature.
- B. Combined Correction Tables for making both temperature and B.S. & W. correction at the same time may be used, if the combined tables are based on the above-mentioned Abridged Volume Correction Table for Petroleum Oils, and if the factors are calculated in such a manner that they give the same results as would be obtained by making the temperature correction and the B.S. and W. deduction separately.
- C. A cubic foot of gas is hereby defined as that amount of gaseous hydrocarbons contained in a cubic foot of space at the base temperature of 60° Fahrenheit and an absolute pressure of 14.4 lbs./sq. in. plus 10 oz./sq. inch, which temperature and pressure are referred to as the base temperature and pressure, respectively.
- D. Basic orifice coefficients used in the calculation of gas flow shall be those contained in the American Gas Association's Gas Measurement Committee Report Number 1 and Number 2, or some other basic orifice coefficients generally accepted in the industry and approved by the Department of Conservation, such as those published by the Foxboro Company, American Meter Company, and Pittsburg Equitable Meter Company. Corrections for base pressure, base temperature shall be made. Corrections for supercompressibility are recommended when equal to or greater than 1 percent in cases where data are available.

Corrections for Reynolds number and expansion factor are recommended only in cases where their combined correction is equal to or exceeds 1 percent.

- E. Gas Measurements with Pitot Tubes shall be based on Reid's formula and shall follow recommendations similar to those set forth in Appendix 4 of the Bureau of Mines Monograph 7. Corrections for base pressure, base temperature, shall be made as in orifice measurements.
- F. Gas measurements with orifice Well Tests shall follow recommendations similar to those set forth in Bulletin Number E-7 of the American Meter Company. Corrections for base pressure and base temperature, and gravity shall be made as in orifice measurements.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (January 1954), (May 1973).

§125. Delegation of Authority

It is the duty of the commissioner of Conservation, or his agents, to make such changes in the monthly production and proration orders as may appear reasonably necessary for the purposes of safety, conservation, the prevention of waste, or the maintenance of proper gas/oil ratio, in accordance with the orders and regulations of the department.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§127. Bottomhole Pressure

The commissioner shall have the authority to require bottom-hole pressure surveys of the various fields at such times as he may designate. However, operators shall be required to take bottom-hole pressures in those wells only which are not likely to suffer any injurious effects therefrom. Tubing and tubingheads shall be free from obstructions in wells used for bottom-hole pressure test purposes.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§129. Pollution Control

A. Permits Required

- 1. Permits are required for wells which inject fluids:
- a. which are brought to the surface in connection with conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection;
 - b. for enhanced recovery of oil and natural gas; and
- c. for storage of hydrocarbons which are liquid at standard temperature and pressure.

- 2. Sub-surface injection or disposal by use of a well as described in Paragraph 1.a, above is prohibited unless authorized by permit or rule. This authorization shall be conditioned upon the applicant taking necessary or corrective action to protect underground sources of drinking water as specified by the commissioner. *Underground source of drinking water* (USDW) means an aquifer or its portion:
 - a.i. which supplies any public water system; or
- ii. which contains a sufficient quantity of ground water to supply a public water system; and
- (a). currently supplies drinking water for human consumption; or
- (b). contains fewer than 10,000 mg/l total dissolved solids; and
- b. which is not an exempted aquifer (see Part XVII.103.H).
- 3. Existing enhanced recovery, saltwater disposal, and liquid hydrocarbon storage wells are authorized by rule and are not required to reapply for a new permit. However, they are subject to the provisions of Subsection J.3.
- 4. the provisions and requirements of this Section shall apply to underground injection by federal agencies or any other person whether or not occurring on property owned or leased by the United States.
- B. Onsite Storage, Treatment and Disposal of Nonhazardous Oilfield Waste (NOW) Generated from the Drilling and Production of Oil and Gas Wells

1. Definitions

Coastal Area—that area comprising inland tidal waters, lakes bounded by the Gulf of Mexico, and salt water marshes and more particularly identified as the intermediate marshes, brackish marshes, and saline marshes on the Vegetative Type Map of the Louisiana Coastal Marshes, published by the Louisiana Department of Wildlife and Fisheries, August, 1978.

Community Saltwater Disposal Well or System—as defined in §129.M.

Contamination—the introduction of substances or contaminants into a groundwater aquifer, a USDW or soil in such quantities as to render them unusable for their intended purposes.

Elevated Wetland Area—a wetland area which is not normally inundated with water and where land mass and levee material are available for mixing with waste fluids during closure of a pit.

Exempt Pits—compressor station pits, natural gas processing plant pits, emergency pits, and salt dome cavern pits located in the coastal area.

Groundwater Aquifer—water in the saturated zone beneath the land surface that contains less than 10,000 mg/l TDS.

Hydrocarbon Storage Brine—well water, potable water, rainwater, or brine (partially saturated to completely saturated) used as a displacing fluid in hydrocarbon storage well operations.

Manufactured Liner—any man-made synthetic material of sufficient size and qualities to sustain a hydraulic conductivity no greater than 1 x 10⁻⁷ cm/sec after installation and which is sufficiently reinforced to withstand normal wear and tear associated with the installation and pit use without damage to the liner or adverse affect on the quality thereof. For purposes of this Section and §129.M, a manufactured liner used in pit construction must meet or exceed the following standards:

Parameter or Test Standard

Thickness (average) > 10 mm (.01 in)
Breaking Strength (Grab Method)* 90 lbs
Bursting Strength * 140 psi
Tearing Strength * 25 lbs
Seam Strength * 50 lbs

*Testing is to be performed according to ASTM method D-751, latest revision.

Mining Water—well water, potable water, rainwater, or unsaturated brine which is injected into a brine solution mining well for recovery as saturated brine.

NOW-nonhazardous oilfield waste.

Nonhazardous Oilfield Waste—as defined in §129.M.

Onsite—for purposes of this Section, on the same lease or contiguous property owned by the lessor, or within the confines of a drilling unit established for a specific well or group of wells.

Operation of Oil and Gas Facilities—as used in this Section, all oil and gas wells, disposal wells, enhanced recovery injection wells and facilities, flowlines, field storage and separation facilities, natural gas processing and/or gas sweetening plants, and compressor stations.

Pit—for purposes of this Section, a natural topographic depression or man-made excavation used to hold produced water or other nonhazardous oilfield waste, hydrocarbon storage brine, or mining water. The term does not include lined sumps less than 660 gallons or containment dikes, ring levees or firewalls constructed around oil and gas facilities.

Produced Water—liquids and suspended particulate matter that is obtained by processing fluids brought to the surface in conjunction with the recovery of oil and gas from underground geologic formations, with underground storage of hydrocarbons, or with solution mining for brine.

Production Pits—either carthen or lined storage pits for collecting NOW sediment periodically cleaned from tanks and other producing facilities, for storage of produced water or other nonhazardous oilfield wastes produced from

the operation of oil and gas facilities, or used in conjunction with hydrocarbon storage and solution mining operations as follows:

- a. *Burn Pits*—carthen pits intended for use as a place to temporarily store and periodically burn nonhazardous oilfield waste (excluding produced water) collected from tanks and facilities.
- b. Compressor Station Pits—lined or earthen pits intended for temporary storage or disposal of fresh water condensed from natural gas at a gas pipeline drip or gas compressor station.
- c. Natural Gas Processing Plant Pits—lined or earthen pits used for the storage of process waters or stormwater runoff. No produced water may be stored in a natural gas processing plant pit.
- d. *Produced Water Pits*—lined or earthen pit used for storing produced water and other nonhazardous oilfield wastes, hydrocarbon storage brine, or mining water.
- e. Washout Pits—lined earthen pits used to collect wash water generated by the cleaning of vacuum truck tanks and other vessels and equipment only used to transport nonhazardous oilfield waste. Any materials other than NOW are prohibited from being placed in such pits.
- f. Well Test Pits—small earthen pits intended for use to periodically test or clean up a well.
- g. Emergency Pits—lined or earthen pits used to periodically collect produced water and other NOW fluids only during emergency incidents, rupture or failure of other facilities.
- h. Onshore Terminal Pits—lined or earthen pits located in the coastal area used for storing produced water at terminals that receive crude oil and entrained water by pipeline from offshore oil and gas production facilities.
- i. Salt Dome Cavern Pits—lined or earthen pits located in the coastal area associated with the storage of petroleum products and petroleum in salt dome caverns.

Reserve Pits—temporary carthen pits used to store only those materials used or generated in drilling and workover operations.

Submerged Wetland Area—a wetland area which is normally inundated with water and where only levec material is available for mixing with waste fluids during closure of a pit.

Underground Source of Drinking Water (USDW)—for the purpose of administering these rules and regulations is defined in Subsection A.2 of this Section.

Upland Area—an area which is not identified as a wetland and includes farm land, pasture land, recreational land, and residential land.

2. General Requirements

a. Produced water generated from the drilling and production of oil and gas wells shall be disposed of into

subsurface formations not productive of hydrocarbons, unless discharged or disposed of according to the provisions of §129.B.2.c or transported offsite in accordance with §129.M.

- b. Produced water may be disposed of by subsurface injection into legally permitted or authorized operators saltwater disposal wells, commercial saltwater disposal wells, commercial saltwater disposal wells, or gas plant disposal wells. The use of hydrocarbon storage brine and mining water in storage and/or mining operations is not considered to be disposal.
- c. Contamination of a groundwater aquifer or a USDW with NOW is strictly prohibited. In addition, the injection of NOW into a groundwater aquifer or a USDW is strictly prohibited.
- d. Produced water and other NOW generated in the drilling and production of oil and gas wells shall not be disposed of into a zone producing or productive of hydrocarbons unless such disposal is approved by the Office of Conservation after a public hearing or unless prior approval to use the proposed zone for such disposal can be documented.
- e. The discharge of produced water or other NOW (including drilled solids) into manmade or natural drainage or directly into state waters is allowed only in conformance with any applicable state or federal discharge regulatory program.
- f. The use of closed NOW storage systems is encouraged by the Office of Conservation; therefore, the use of new or existing pits to store produced water, drilling fluids, and other NOW generated from the drilling and production of oil and gas wells is prohibited unless:
- i. notification for each pit is submitted to the Office of Conservation as outlined in §129.B.3, and
- ii. pits are in conformance with standards set forth in \$129.B.4.
- g. Unless exempted from liner requirements in §129.B.2.k.viii or B.2.m below, all existing produced water pits, onshore terminal pits, and washout pits which are to be utilized in the operation of oil and gas or other facilities must be shown to comply with the liner requirements of §129.B.4.a.i or be permanently closed in accordance with the pit closure criteria of §129.B.6 and 7 by January 20, 1989. A certification attesting to compliance with these requirements shall be submitted to this office in a timely manner.
- h. All existing pits which are not to be utilized in the operation of oil and gas or other facilities must be permanently closed according to the requirements of \$129.B.6 and 7 by January 20, 1989. A certification attesting to compliance with these requirements shall be submitted to this office in a timely manner.
- i. Operators of existing pits are required to comply with all applicable operational requirements of §129.B.4.a.ii

- and iv, b.i, ii, and iii, c.ii, iv, v, and vi, d.ii, iv, and v, e.i, iii, iv, and vi, and f.i and iii.
- j. Production pits, except for those identified in §129.B.2 k.i and m below, may not be constructed in a "V" or A zone as determined by flood hazard boundary or rate maps and other information published by the Federal Emergency Management Agency (FEMA), unless such pits have levees which have been built at least 1 foot above the 100-year flood level and able to withstand the predicted velocity of the 100-year flood. Location, construction and use of such pits is discouraged.
- k. Production pits located in the coastal area shall be subject to the following requirements:
- i. Except for exempt pits, no production pit may be constructed in the coastal area after June 30, 1989.
- ii. Production pits located in the coastal area shall be closed in compliance with §129.B.6 and 7 by January 1, 1993 with the following exceptions:
- (a). exempt pits as such term is defined in §129.B.1;
- (b). any onshore terminal pit that was in existence on June 30, 1989, provided such pit has an approved Louisiana Water Discharge Permit System (LWDPS) permit applicable thereto. Upon expiration of such permit, operator shall discontinue use of said pit and comply with the provisions of §129.B.4;
- (c). any production pit which is subject to an approved Louisiana Water Discharge Permit System (LWDPS) permit is not subject to the closure requirements of §129.B.6 and 7 until January 1, 1995 or until expiration of such permit which ever occurs first. Upon expiration of such permit, operator shall discontinue use of said pit and comply with the provisions of §129.B.4.
- iii. Operators of existing production pits located in the coastal area shall submit Form UIC-15-CP to the Office of Conservation by January 1, 1991. Pits closed prior to October 20, 1990 are not considered existing pits for purposes hereof.
- iv. Operators intending to construct an exempt pit shall submit Form UIC-15-CP to the Office of Conservation at least 10 days prior to start of construction thereof.
- v. Production pits located within the coastal area must maintain a levee with an elevation of at least 2 feet above mean high tide, the liquid level in pit(s) shall not be permitted to rise within 2 feet of top of pit levee or walls, and any surface water discharge from an active pit must be done in accordance with appropriate state or federal regulatory programs. Such discharge must be piped to open water (within the marsh) that receives good flushing action and shall not otherwise significantly increase the salinity of the receiving body of water or marsh. Further, unless otherwise indicated in §129.B.2.k.vi, vii, viii and ix. Production Pits located in the coastal area shall comply with

the standards and operational requirements set forth in §129.B.4.

- vi. Burn pits, compressor station pits, natural gas processing plant pits, and well test pits located in the coastal area are exempt from the liner requirements of \$129.B.4.a.
- vii. Salt dome cavern pits are exempt from the liner requirements of §129.B.4.a.
- viii. Produced water pits, washout pits, and onshore terminal pits located in the coastal area shall comply with the liner requirements of §129.B.4.a unless such pit is subject to an approved Louisiana Water Discharge Permit System (LWDPS) permit.
- ix. Emergency pits located in the coastal area shall comply with the requirements of §129.B.4.c unless such pit is subject to an approved Louisiana Water Discharge Permit System (LWDPS) permit.
- x. Any production pit which is not subject to an approved Louisiana Water Discharge Permit System (LWDPS) permit on October 20, 1990 shall submit a closure plan to the Office of Conservation by January 1, 1991.
- 1. Within six months of the completion of the drilling or workover of any permitted well, the operator (generator) shall certify to the commissioner by filing Form UIC-16 the types and number of barrels of NOW generated, the disposition of such waste, and further certify that such disposition was conducted in accordance with applicable rules and regulations of the Office of Conservation. Such certification shall become a part of the well's permanent history.
- m. Based upon the best practical technology, production pits located within an 'A' zone (FEMA) which meet the following criteria are not subject to the levee height requirements of §129.B.2.j above or the liner requirements of §129.B.4.a.i:
- i. pit size is less than or equal to 10' x 10' x 4' deep;
 - ii. such pit contains only produced brine; and
- iii. such pit is utilized for gas wells producing less than 25 mcf per day and less than or equal to one barrel of saltwater per day (bswpd).

Evidence of contamination of a groundwater aquifer or USDW may require compliance with the monitoring program of §129.B.5, compliance with the liner requirements of §129.B.4.a.i, or immediate closure of the pit.

3. Notification

a. Existing Pits

i. Each pit which was constructed prior to January 20, 1986 is an existing pit. Use of an existing pit is prohibited unless the operator has reported that pit to the Office of Conservation by July 20, 1986 according to the

- requirements of this Paragraph. Notification shall contain the information requested below. Pits closed prior to January 20, 1986 are not considered existing pits.
- ii. Operators of existing pits must submit the following information to the Office of Conservation by July 20, 1986:
- (a). For each existing pit to be utilized in the operation of oil and gas facilities, the information requested in Paragraph 3.d.i-viii below;
- (b). For each existing pit not to be utilized in the operation of oil and gas facilities the information requested in Paragraph 3.d.i-vi below;
- (c). A plan and schedule of abandonment for closure of pits identified in (b) above. Such plan must comply with the provisions of §129.B.2.h, B.6, and B.7. Failure to comply with the plan in a timely manner will subject an operator to appropriate civil penaltics.
- iii. Operators of existing pits in the coastal area shall comply with the requirements of §129.B.2.k.iii.
- b. New Pits. Except for reserve pits, operators must notify the Office of Conservation of the intent to construct new pits at least 10 days prior to start of construction. Notification shall contain all information requested in §129.B.3.d or B.2.k.iv as appropriate. The Office of Conservation may inspect any proposed pit site prior to or during construction; however, initial use of the completed pit need not be deferred if no inspection is made.
- c. Reserve Pit Notification. For reserve pits used in drilling and workover operations, notification requirements of this rule shall be satisfied by application for a drilling or work permit.
- d. Notification Information Required FORM UIC-
- i. name of facility pit (indicate whether new or existing);
 - ii. field designation, if applicable;
- iii. section, township and range (include approximate footage location of pit center);
 - iv. parish name;
- v. type of pit (consistent with definitions in Subsection B.1);
 - vi. size of pit (length, width and depth);
 - vii. type of liner if applicable;
- viii. certification that each pit will or does conform to standards stipulated under §129.B.4 applicable to that type pit and that such compliance will be within the time frame described in §129.B.2.g, h, and i, if applicable.
- 4. Pit Classification, Standards, and Operational Requirements. Pits shall meet the following criteria as applicable:

- a. Produced Water, Onshore Terminal, and Washout Pits
- i. Except where exempted by \$129.B.2.k.viii and m, groundwater aquifer and USDW protection for above-listed pits shall be provided by one of the following:
- (a). A liner along the bottom and sides of pits which has the equivalent of 3 continuous feet of recompacted or natural clay having a hydraulic conductivity no greater than 1×10^{-7} cm/sec. Such liners include, but are not limited to the following:
- (i). Natural Liner—natural clay having a hydraulic conductivity meeting the requirements of (a) above.
- (ii). Soil Mixture Liner—soil mixed with cement, clay-type, and/or other additives to produce a barrier which meets the hydraulic conductivity requirements of (a) above.
- (iii). Recompacted Clay Liner—in situ or imported clay soils which are compacted or restructured to meet the hydraulic conductivity requirements of (a) above.
- (iv). Manufactured Liner—synthetic material that meets the definition in §129.B.1 and is equivalent or exceeds the hydraulic conductivity requirements of (a) above. Pits constructed with a manufactured liner must have side slopes of 3:1 and the liner at the top of the pit must be buried in a 1' wide and 1' deep trench. A sufficient excess of liner material shall be placed in the pit to prevent tearing when filled with NOW.
- (v). Combination Liner—a combination of two or more types of liners described in this Section which meets the hydraulic conductivity requirements of (a) above.
- (b). Any other alternate groundwater aquifer and USDW protection system acceptable to the Office of Conservation.
- ii. Pits shall be protected from surface waters by levees or walls and by drainage ditches, where needed, and no siphon or openings will be placed in or over levees or walls that would permit escaping of contents so as to cause pollution or contamination. Authorized surface discharges of pit contents under federal and/or state regulatory programs are not considered to be pollution or contamination as used herein.
- iii. A representative of the Office of Conservation must be given an opportunity to inspect prior to and during construction of the pit as provided under §129.B.3.b.
- iv. Liquid levels in pits shall not be permitted to rise within 2 feet of top of pit levees or walls. Pit levees or walls shall be maintained at all times to prevent deterioration, subsequent overfill, and leakage of NOW to the environment.
- v. When use of a pit will be permanently discontinued by the operator of record, the Office of Conservation shall be notified in writing. Pits shall be

emptied of all fluids in a manner compatible with all applicable regulations and closed in accordance with \$129.B.6 and 7 within six months of abandonment.

b. Reserve Pits

- i. Pits shall be protected from surface waters by levees or walls and by drainage ditches, where needed, and no siphons or openings will be placed in or over levees or walls that would permit escaping of contents so as to cause pollution or contamination. Authorized surface discharges of pit contents under federal or state regulatory programs are not considered to be pollution or contamination as used herein.
- ii. Liquid levels in pits shall not be permitted to rise within 2 feet of top of pit levees or walls. Pit levees or walls shall be maintained at all times to prevent deterioration, subsequent overfill, and leakage of NOW to the environment.
- iii. Operators shall prevent the placing of produced water, waste oil, trash, or any other material into a reserve pit which would increase the difficulty in clean-up of the pit or otherwise harm the environment. Such material shall be properly stored and disposed of according to applicable state or federal regulations.
- iv. Pits shall be emptied of fluids in a manner compatible with all applicable regulations, and closed in accordance with §129.B.6 and 7 within six months of completion of drilling or work over operations.

c. Burn Pits

- i. Pits shall be constructed in such a manner as to keep fire hazards to a minimum, and in no case shall be located less than 100 feet from a well location, tank battery, separator, heater-treater, or any and all other equipment that may present a fire hazard.
- ii. Pits shall be protected from surface waters by levees or walls and by drainage ditches, where needed, and no siphons or openings will be placed in or over levees or walls that would permit escaping of contents so as to cause pollution or contamination.
- iii. A representative of the Office of Conservation must be given an opportunity to inspect prior to and during construction of the pit as provided under \$129.B.3.b.
- iv. Any burning process shall be carried out in conformance with applicable air quality regulations. Notification as required by said regulation shall be made to the Air Quality Division, Department of Environmental Quality.
- v. No produced water, radioactive material (except industry-accepted and license-approved radioactive material utilized in oilfield operations, and radioactive material naturally occurring in the produced fluids), or other noncombustible waste products shall be placed in pits, except water or emulsion which may be associated with crude oil swabbed or otherwise produced during test

operations, or during tank or other vessel cleaning operations. NOW must be removed or burned periodically to assure that storage of materials in the pit is kept to a minimum

- vi. Liquid levels in pits shall not be permitted to rise within 2 feet of top of pit levees or walls. Pit levees or walls shall be maintained at all times to prevent deterioration, subsequent overfill, and leakage of NOW to the environment.
- vii. When use of pits will be permanently discontinued by the operator of record, the Office of Conservation shall be notified in writing. Pits shall be emptied of fluids in a manner compatible with all applicable regulations, and closed in accordance with \$129.B.6 and 7 within six months of abandonment.

d. Well Test Pits

- i. Pits shall be constructed in such a manner as to keep fire hazards to a minimum, and in no case shall be located less than 100 feet from a well location, tank battery, separator, heater-treater, or any and all other equipment that may present a fire hazard.
- ii. Pits shall be protected from surface waters by levees or walls and by drainage ditches, where needed, and no siphons or openings will be placed in or over levees or walls that would permit escaping of contents so as to cause pollution or contamination.
- iii. A representative of the Office of Conservation must be given an opportunity to inspect prior to and during construction of the pit as provided under \$129.B.3.b.
- iv. Within 30 days after completion of a well test, pits shall be emptied of produced fluids and must remain empty of produced fluids during periods of nonuse.
- v. Liquid levels in pits shall not be permitted to rise within 2 feet of top of pit walls or dikes. Pit levees or walls shall be maintained at all times to prevent deterioration, subsequent overfill, and leakage of NOW to the environment.
- vi. When use of pits will be permanently discontinued, the Office of Conservation shall be notified in writing. Pits shall be emptied of fluids in a manner compatible with all applicable regulations, and closed in accordance with §129.B.6 and 7 within six months of abandonment.

e. Emergency Pits

i. Groundwater aquifer and USDW protection for emergency pits shall be evaluated on a case-by-case basis. Operators who intend to utilize existing or new emergency pits without liners must demonstrate by written application to the Office of Conservation that groundwater aquifer and USDW contamination will not occur; otherwise, emergency pits shall be lined. Applications to demonstrate unlined pits will not contaminate

groundwater aquifers and USDW's shall at a minimum address the following:

- (a). Emergency Incident Rate—operator shall estimate the number of times a pit will be utilized each year. A detailed discussion of the facility operation and reasons for the emergency incident rate must be addressed.
- (b). Soil Properties—operator shall describe and evaluate soil properties onsite. Soil hydraulic conductivity and physical properties must be addressed to assess potential groundwater aquifer and USDW impacts.
- (c). Groundwater Aquifer Evaluation—water quality, groundwater aquifer, and USDW depth shall be evaluated.
- (d). Produced Water Composition (total dissolved solids and oil and grease)—must be determined to assess potential impacts on the site.
- ii. All emergency pits required to be lined must conform to hydraulic conductivity requirements in §129.B.4.a.i above.
- iii. No produced water or any other NOW shall be intentionally placed in any emergency pit not meeting the hydraulic conductivity requirements (1 x 10^{-7} cm/sec for 3 continuous feet of clay) except in the case of an emergency incident. In emergency situations, notice must be given to the Office of Conservation within 24 hours after discovery of the incident. Produced water and any other NOW must be removed from the pit within seven days following termination of the emergency situation.
- iv. Pits shall be protected from surface waters by levees and by drainage ditches, where needed, and no siphons or openings will be placed in or over levees or walls that would permit escaping of contents so as to cause pollution or contamination. Surface discharges of pit contents under federal or state permits are not considered to be pollution or contamination as used herein.
- v. A representative of the Office of Conservation must be given an opportunity to inspect prior to and during construction of the pits as provided under §129.B.3.b.
- vi. Liquid level in pits shall not be permitted to rise within 2 feet of top of pit levees. Pit levees or walls shall be maintained at all times to prevent deterioration, subsequent overfill, and leakage of NOW to the environment.
- vii. When use of pits will be permanently discontinued, the Office of Conservation shall be notified in writing. After notification to the Office of Conservation, pits shall be emptied of all fluids in a manner compatible with all applicable regulations, and closed in accordance with §129.B.6 and 7 within six months of abandonment.
- f. Natural Gas Processing Plant Pits, Compressor Station Pits, and Salt Dome Cavern Pits
- i. Pits shall be protected from surface waters by levees or walls and by drainage ditches, where needed,

and no siphon or openings will be placed in or over levees or walls that would permit escaping of contents so as to cause pollution or contamination. Authorized surface discharges of pit contents under federal and/or state regulatory programs are not considered to be pollution or contamination as used herein.

- ii. A representative of the Office of Conservation must be given an opportunity to inspect prior to and during construction of the pit as provided under §129.B.3.b.
- iii. Liquid levels in pits shall not be permitted to rise within 2 feet of top of pit levees or walls. Pit levees or walls shall be maintained at all times to prevent deterioration, subsequent overfill, and leakage of NOW to the environment.
- iv. When use of a pit will be permanently discontinued by the operator of record, the Office of Conservation shall be notified in writing. Pits shall be emptied of all fluids in a manner compatible with all applicable regulations and closed in accordance with §129.B.6 and 7 within six months of abandonment.
- g. Office of Conservation Corrective Action and Closure Requirement. Should the Office of Conservation determine that continued operation of pits specified in this Subparagraph may result in contamination of a groundwater aquifer or a USDW, or the discharge of fluids into man-made or natural drainage or directly into state waters, or contamination of soils outside the confines thereof, further use of the pit shall be prohibited until conditions causing or likely to cause contamination have been corrected. If corrective measures are not satisfactorily completed in accordance with an Office of Conservation compliance order or schedule, the commissioner may require closure of the pit. When an order for closure is issued, a pit shall be closed in accordance with §129.B.6 and 7 and the operator must comply with any closure schedule issued by the Office of Conservation

5. Monitoring Program

- a. Upon a determination by the operator or the Office of Conservation that any pit subject to this rule is likely to contaminate a groundwater aquifer or a USDW, the Office of Conservation shall require the timely submission of a plan for the prevention of such contamination. Such plan may include using an under-built drainage and collection system, monitoring wells, and/or other means that the Office of Conservation may approve to prevent or detect contamination. Any required monitor wells shall be registered with the appropriate state agency.
- b. When required by the Office of Conservation, monitoring shall be conducted on a quarterly schedule. A written report summarizing the results of such monitoring shall be submitted to the Office of Conservation within 30 days of the end of each quarter.
- c. If monitoring of a groundwater aquifer or USDW indicates contamination due to a discharge from a pit, the owner or operator shall immediately notify the Office of

Conservation. Within 30 days, the operator shall empty the pit of all NOW and submit a remedial plan for prevention of further contamination of any groundwater aquifer or any USDW. Upon approval, the remedial plan shall be implemented by the operator and monthly progress reports, reviewing actions taken under the plan and their results, will be filed with the Office of Conservation until all actions called for in the plan have been satisfactorily completed.

d. Notification received by the Office of Conservation, pursuant to §129.B.5.a, b, or c above, of any contamination of a groundwater aquifer or a USDW as the possible result of a discharge, or information obtained by the exploitation of such notification shall not be used against the reporting owner or operator in any criminal action, including but not limited to those provided for by Louisiana Revised Statutes 30:18, except in a prosecution for perjury or for giving a false statement.

6. Pit Closure

- a. Pits must be closed properly to assure protection of soil, surface water, groundwater aquifers and USDW's. Operators may close pits utilizing onsite land treatment, burial, solidification or other techniques approved by the Office of Conservation only if done so in compliance with §129.B.7 or 8. Otherwise, all NOW must be manifested according to §129.M.6 and transported offsite to a permitted commercial facility.
- b. Liability for pit closure shall not be transferred from an operator to the owner of the surface land(s) on which a pit is located.
- c. For evaluation purposes prior to closure of any pit and for all closure and onsite and offsite disposal techniques, excluding subsurface injection of reserve pit fluids, nonhazardous oilfield waste (pit contents) must be analyzed for the following parameters:
 - i. pH;
 - ii. total metals content (ppm) for:
 - (a). Arsenic;
 - (b). Barium;
 - (c). Cadmium;
 - (d). Chromium;
 - (e). Lead;
 - (f). Mercury;
 - (g). Selenium;
 - (h). Silver;
 - (i). Zinc;
 - iii. oil and grease (percent dry weight);
 - iv. soluble salts and cationic distributions:
- (a). electrical conductivity—EC in mmhos/cm (millimhos);

- (b). sodium adsorption ratio-SAR;
- (c). exchangeable sodium percentage—ESP (percent); and
- (d). cation exchange capacity—CEC (milliequivalents/100 gm soil).
- v. Radioisotopes if such pit is located in the coastal area and is closed after October 20, 1990.
- d. Laboratory Procedures for Nonhazardous Oilfield Waste Analyses
- i. For soluble salts, cationic distributions, metals (except barium) and oil and grease (organics) samples are to be analyzed using standard soil testing procedures as presented in the Laboratory Manual for the Analysis of Oilfield Waste (Department of Natural Resources, August 9, 1988, or latest revision).
- ii. For barium analysis, samples are to be digested in accordance with the "True Total" method, as presented in the Laboratory Procedures Manual for the Analysis of Oilfield Waste (Department of Natural Resources, August 9, 1988 or latest revision).
- iii. For radioisotopes, the sampling and testing of pit sludges shall comply with the provisions of Department of Environmental Quality, NORM Regulatory Guide, dated March 12, 1990 or latest revision thereof.
- c. Documentation of testing and closure activities, including onsite disposal of NOW, shall be maintained in operator's files for at least three years after completion of closure activities. Upon notification, the Office of Conservation may require the operator to furnish these data for verification of proper closure of any pit. If proper onsite closure has not been accomplished, the operator will be required to bring the site into compliance with applicable requirements.
- f. Reserve pits utilized in the drilling of wells less than 5,000 feet in depth are exempt from the testing requirements of §129.B.6.c and B.7 provided the following conditions are met:
- i. The well is drilled using only freshwater "native" mud which contains no more than 25 lbs/bbl bentonite, .5 lbs/bbl caustic soda or lime, and 50 lbs/bbl barite; and
- ii. Documentation of the above condition is maintained in the operator's files for at least three years after completion of pit closure activities.
- 7. Pit Closure Techniques and Onsite Disposal of NOW
- a. Reserve pit fluids, as well as drilling muds, cuttings, etc. from holding tanks, may be disposed of onsite provided the technical criteria of §129.B.7.c, d, e, or f below are met, as applicable. All NOW must be either disposed of on-site or transported to an approved commercial facility or transfer station in accordance with the requirements of §129.M or under the direction of the commissioner.

- b. Prior to conducting onsite pit closure activities, an operator must make a determination that the requirements of this Subparagraph are attainable.
- c. For all pit closure techniques in this Subparagraph, except solidification, waste/soil mixtures must not exceed the following criteria:
 - i. range of pH: 6 9;
 - ii. total metals content (ppm):

Parameter	Limitation
Arsenic	10
Barium	
Submerged Wetland Area	20,000
Elevated Wetland Area	20,000
Upland Area	40,000
Cadmium	10
Chromium	500
Lead	500
Mercury	10
Selenium	10
Silver	200
Zinc	500

- d. Land Treatment. Pits containing NOW may be closed onsite by mixing wastes with soil from pit levees or walls and adjacent areas provided waste/soil mixtures at completion of closure operations do not exceed the following criteria, as applicable, unless the operator can show that higher limits for EC, SAR, and ESP can be justified for future land use or that background analyses indicate that native soil conditions exceed the criteria:
- i. In addition to the pH and metals criteria listed in \$129.B.7.c above, land treatment of NOW in submerged wetland, elevated wetland, and upland areas is permitted if the oil and grease content of the waste/soil mixture after closure is < 1 percent (dry weight).
- ii. Additional parameters for land treatment of NOW in clevated, freshwater wetland areas where the disposal site is not normally inundated:
- (a). electrical conductivity (EC-solution phase): < 8 mmhos/cm;
- (b). sodium adsorption ratio (SAR-solution phase): < 14;
- (c). exchangeable sodium percentage (ESP-solid phase): 25 percent.
- iii. Additional parameters for land treatment of NOW in upland areas:
- (a). electrical conductivity (EC-solution phase): < 4 mmhos/cm;

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- (b). sodium adsorption ratio (SAR-solution phase): ≤ 12 ;
- (c). exchangeable sodium percentage (ESP-solid phase): < 15 percent.
- e. Burial or Trenching. Pits containing NOW may be closed by mixing the waste with soil and burying the mixture onsite, provided the material to be buried meets the following criteria:
- i. the pH and metals criteria in \$129.B.7 above;
 - ii. moisture content: < 50 percent by weight;
- iii. electrical conductivity (EC): < 12 mmhos/cm;
- iv. oil and grease content: < 3 percent by weight;
- v. top of buried mixture must be at least 5 feet below ground level and then covered with 5 feet of native soil;
- vi. bottom of burial cell must be at least 5 feet above the seasonal high water table.
- f. Solidification. Pits containing NOW may be closed by solidifying wastes and burying it onsite provided the material to be buried meets the following criteria:
 - i. pH range: 6 12;
 - ii. Leachate testing* for oil and grease:

< 10.0 mg/1

chlorides $\leq 500.0 \text{ mg/1}$

*Note: The leachate testing method for oil and grease is included in the Laboratory Manual for the Analysis of Oilfield Waste (Department of Natural Resources, August 9, 1988, or latest revision).

- iii. Leachate testing* for the following metals:
- (a). Arsenic < 0.5 mg/l
- (b). Barium < 10.0 mg/l
- (c). Cadmium $\leq 0.1 \text{ mg/l}$
- (d). Chromium $\leq 0.5 \text{ mg/}1$
- (e). Lead < 0.5 mg/1
- (f). Mercury $\leq 0.02 \text{ mg/l}$
- (g). Selenium $\leq 0.1 \text{ mg/1}$
- (h). Silver < 0.5 mg/1
- (i). Zinc < 5.0 mg/1

*Note: The leachate testing method for metals is included in the Laboratory Manual for the Analysis of Oilfield Waste (Department of Natural Resources, August 9, 1988, or latest revision).

- iv. top of buried mixture must be at least 5 feet below ground level and covered with 5 feet of native soil:
- v. bottom of burial cell must be at least 5 feet above the seasonal high water table;
- vi. solidified material must meet the following criteria*:
- (a). unconfined compressive strength (Qu): ≥ 20 lbs/in² (psi);
 - (b). permeability: <1 x 10⁻⁶ cm/sec:
 - (c). wet/dry durability: > 10 cycles to failure.

*Note: Testing must be conducted according to ASTM or other approved methods prior to pit closure by solidification processes.

g. Passive Closure

- i. The Office of Conservation will consider requests for passive pit closure provided one of the following conditions exists:
- (a). where pit closure would create a greater adverse environmental impact than if the pit were allowed to remain unreclaimed:
- (b). where pit usage can be justified for agricultural purposes or wildlife/ecological management.
- ii. Operators requesting passive pit closure shall submit the following:
- (a). an affidavit requesting passive pit closure for one of the reasons contained in §129.B.7.g.i;
- (b). a copy of Form UIC-15 or UIC-15-CP with pit identification number shown thereon;
- (c). an affidavit of no objection from the Louisiana Department of Wildlife and Fisheries obtainable by contacting:

La. Department of Wildlife & Fisheries

P.O. Box 9800

Baton Rouge, LA 70898

Telephone: (504) 765-2367

(d). where applicable, an affidavit of no objection from the Department of Natural Resources, Coastal Management Division, obtainable by contacting:

Department of Natural Resources Coastal Management Division P.O. Box 44487 Baton Rouge, LA 70804-4487 Telephone: (504) 342-7591

- (e). an affidavit of no objection from the landowner endorsing operator's request for passive pit closure;
 - (f). a photograph of the pit in question;

- (g). an inspection of the pit signed by a conservation enforcement agent and a representative of the operator. The operator shall contact the applicable conservation district office to arrange date and time for inspection;
- (h). analytical laboratory reports of the pit bottoms and pit levees indicating conformance with applicable land treatment criteria set forth in §129.B.7.c and d;
- (i). an analytical laboratory report of the fluid contents of the pit indicating conformance with applicable state and federal discharge regulatory program. Contact the Department of Environmental Quality, Water Pollution Control Division, (504) 342-6363 for information regarding effluent limitations.
- iii. The commissioner of Conservation retains the right to grant exceptions to the requirements of \$129.B.7.g.ii as he deems appropriate.

h. Offsite Disposal of NOW

- i. Except for produced water, drilling, workover and completion fluids, and rainwater which may be transported by an oil and gas operator to a community well or an operators permitted Class II disposal well or discharged to surface waters where authorized, nonhazardous oilfield waste shall not be moved offsite for storage, treatment, or disposal unless transported to an approved commercial facility or transfer station in accordance with the requirements of §129.M or under the direction of the commissioner.
- ii. The criteria for land treatment, burial, or solidification listed above will apply, as appropriate, to the onsite disposal of any nonhazardous oilfield waste remaining onsite.
- iii. NOW that fails to meet the criteria of this Paragraph for onsite disposal shall be moved offsite by the operator to a permitted commercial facility or transfer station in accordance with the requirements of §129.M.
- 8. Disposal of Reserve Pit Fluids by Subsurface Injection

a. General Provisions

- i. The disposal (subsurface injection) of drilling and workover waste fluids (including reserve pit fluids) into (1) a newly drilled well which is to be plugged and abandoned or (2) into the casing annulus of a well being drilled, a recently completed well, or a well which has been worked over is prohibited, except when such injection is conducted in accordance with the requirements of this Subparagraph.
- ii. Injection of drilling and workover waste fluids shall not commence until approval has been granted by the Office of Conservation. Operators may apply for approval when applying for a drilling permit. Approval for injection into a well will remain valid for subsequent

- workovers provided the criteria in §129.B.8.c below continue to be met.
- iii. Injection of drilling and workover waste fluids (including reserve pit fluids) shall be limited to injection of only those fluids generated in the drilling, stimulation or workover of the specific well for which authorization is requested. Reserve pit fluids may not be transported from one well location to another for injection purposes.
- iv. Injection of drilling and workover waste pit fluids into zones that have been tested for hydrocarbons or are capable of hydrocarbon production is prohibited, except as otherwise provided by the commissioner.
- v. Pump pressure shall be limited so that vertical fractures will not extend to the base of the USDW and/or groundwater aquifer.
- vi. A drilling and workover waste fluids injection site may be inspected by a duly authorized representative of the commissioner prior to approval.
- vii. Drilling and workover waste fluids to be injected pursuant to the provisions of this Subparagraph are exempt from the testing requirements of §129.B.6.c.

b. Application Requirements

- i. Prior to the onsite injection of reserve pit fluids, an application shall be filed by the well operator on the appropriate form. The original and one copy of the application (with attachments) shall be submitted to the Office of Conservation for review and approval.
- ii. An application for approval of reserve pit fluid inject tion shall include:
 - (a). schematic diagram of well showing:
 - (i). total depth of well,
- (ii). depths of top and bottom of all casing strings and the calculated top of cement on each,
 - (iii). size of casing, and
 - (iv). depth of the deepest USDW;
 - (b). operating data:
 - (i). maximum pressure anticipated, and
 - (ii). estimated volume of fluids to be injected;
- (c). a copy of the electric log of the well (if run) or a copy of the electric log of a nearby well;
- (d). additional information as the commissioner may require.

c. Criteria for Approval

- i. Casing string injection may be authorized if the following conditions are met and injection will not endanger underground sources of drinking water:
- (a). Surface casing annular injection may be authorized provided the surface casing is set and cemented at

least 200 feet below the base of the lowermost USDW, except as otherwise provided by the commissioner; or

- (b). Injection through perforations in the intermediate or production casing may be authorized provided that intermediate or production casing is set and cemented at least 200 feet below the base of the lowermost USDW, except as otherwise provided by the commissioner.
- ii. Surface casing open hole injection may be approved provided the surface casing is set and cemented at least 200 feet below the lowermost USDW and a cement plug of at least 100 feet has been placed across the uppermost potential hydrocarbon bearing zone.
- 9. Requirements for Community Saltwater Disposal Wells and Systems
- a. The use of a legally permitted saltwater disposal well and system for community saltwater disposal purposes is prohibited unless the disposal well system operator submits a statement of noncommercial operation and the information requested in \$129.B.9.b below to the Office of Conservation. Such statement must indicate that the operators using the community saltwater disposal system share only in the cost of operating and maintaining the well and related storage tanks and equipment (system).
- b. The operator of an existing or proposed community saltwater disposal well and system must submit the following information to the Office of Conservation:
- i. the name of the community saltwater disposal system including the disposal well name(s) and number(s), serial number(s), field, and section, township, and range;
- ii. a list of the operators using the community saltwater disposal system;
- iii. a list of the producing wells (well name, number, and serial number) from which saltwater going into the community saltwater system is generated;
- iv. the approximate number of barrels per month of saltwater received from each producing well;
- v. the method of transportation of the saltwater to the community system (i.e., truck, pipeline, etc.).
- c. Within six months of the effective date of this amendment and annually thereafter, the operator of an existing community saltwater disposal system shall report the information required in §129.B.9.b above to the Office of Conservation.
- C. Application Requirements for New Enhanced Recovery Injection and New Saltwater Disposal Wells
- 1. Each application for the approval of a new enhanced recovery injection well or disposal well shall be filed on Form MD-10-R and shall be verified by a duly authorized representative of the operator. The original and one copy of the application and two complete sets of attachments shall be furnished to the commissioner. An

- application for the approval of an injection well which is a part of a proposed enhanced recovery operation may be consolidated with the application for the approval of the enhanced recovery project (see Subsection C.2.d below).
- 2. The application for the approval of an enhanced recovery injection or disposal well or wells shall be accompanied by:
- a. a map showing the disposal well or enhanced recovery project area for which a permit is sought and the applicable area of review (for individual wells—¼ mile radius; for enhanced recovery projects—the project area plus a circumscribing area the width of which is ¼ mile) and the following information:
- i. within the area of review, the map must show the number or name and location of all existing producing wells, injection wells, abandoned wells and dry holes:
- ii. identification of the surface owner of the land on which the enhanced recovery injection or disposal is to be located within the area of review;
- iii. identification of each operator of a producing leasehold within the area of review;
- iv. the map may also show surface bodies of water, mines (surface and subsurface), quarries and other pertinent surface features including residences and roads, and faults if known or projected; and
- v. only information on file with the Office of Conservation and pertinent information known to the applicant is required to be included on this map;
- b. if the well has been drilled, a copy of the Well History and Work Resume Report (WH-1) and any available electric or radioactive log of the well. A descriptive statement of the proposed zone to be used for injection or disposal. The approximate depth of said zone in the case of undrilled wells along with an electric or radioactive log of a nearby well, if available;
 - c. a schematic diagram of the well showing:
- i. the total depth, drilled out depth or plugged back depth of the well;
- ii. the depth of the top of the injection or disposal interval;
- iii. the geological name of the injection or disposal zone;
- iv. the depths of the tops and bottoms of the casing and amount of cement used to cement each string of casing; (Every well used for injection shall be cased, cemented and tested in accordance with Subsections H and J of this Order.)
- v. the size of the casing and tubing, and the depth of the packer; and

- d. information showing that injection into the proposed zone will not initiate fractures through the overlying strata which could enable the injection fluid or formation fluid to enter an underground source of drinking water. This requirement will be satisfied upon proper demonstration by the applicant that the pressure in the well at the depth of injection shall not exceed 75 percent of the pressure needed to fracture the formation;
 - e. proposed operating data:
 - i. daily injection rates and pressures;
- ii. geologic names, depths and location of injection fluid sources;
- iii. qualitative and quantitative analysis of water from two or more existing water wells within one-quarter mile of proposed enhanced recovery injection or disposal

- well or wells. Give location of said water wells and date(s) samples were taken, or statement why samples were not submitted;
- iv. qualitative and quantitative analysis of representative sample of water to be injected;
- v. geological name of injection zone and vertical distance separating top of injection zone from base of the deepest USDW, and a geological description of each major separating bed including individual bed thickness; and
- vi. geological name, if known, and depth of the base of the deepest USDW.
- D. Application Requirements for Enhanced Recovery Projects
- 1. An enhanced recovery project shall be permitted only by order of the commissioner after notice and public hearing.
- 2. The application for a permit authorizing an enhanced recovery project shall contain the following:
- a. the names and addresses of the operator or operators of the project;
- b. in addition to the information on the map required in Subsection C.2.a of this amendment, show the lease, group of leases, unit or units included within the proposed project;
- c. the common source or sources of supply in which all wells are currently completed;
- d. the name, description and depth of each common source of supply to be affected;
- e. a log of a representative well completed in the common source or sources of supply;
- f. a description of the existing or proposed casing programs for injection wells, and the proposed method of testing all casing;
- g. a description of the injection medium to be used, its source or sources and the estimated amounts to be injected daily;
- h. for a project within an allocated pool, a tabulation showing recent gas-oil ratios and oil and water production tests for each of the producing oil and/or gas wells;
- i. the proposed plan of development of the area included within the project; and
- j. a schematic diagram of existing and/or proposed injection well(s) as set out in Subsection C.2.c of this amendment.
- 3. A copy of the application shall be mailed to each operator offsetting the project as shown on the application within five days after the application is filed. An affidavit of compliance with this rule shall be filed on or before the hearing.

4. Injectivity Tests and Pilot Projects

- a. Injectivity Test. The commissioner may administratively approve for a period of one week an injectivity test in order to determine the injection rate, injectivity index, and/or pressure analysis of a well for enhanced recovery.
- i. Requests for injectivity tests must include the following:
 - (a). well name and number;
 - (b). serial number;
 - (c). Form WH-1 of the well;
 - (d). schematic diagram of the well;
 - (e). sand, reservoir, and field;
 - (f). brief discussion of the proposed test.
- ii. The commissioner must be provided with the results of the injectivity test after completion.
- b. Pilot Projects. The commissioner may administratively approve pilot projects for enhanced recovery for a period of six months from the date of initiation of injection.
- i. Requests for pilot projects must include Form UIC-II(EOR) for each well to be used for injection within the project and such additional information the commissioner deems necessary to justify the approval of the pilot project.
- ii. Wells used for injection within the pilot project are exempt from the provisions of §129.E of this Order.
- iii. Within 10 days of initiation of injection the operator must notify the commissioner in writing the date injection actually commenced.
- iv. To continue operation beyond the sixmonth pilot project approval, the operator must obtain approval of an enhanced recovery project (prior to the expiration date of the administratively approved six-month pilot project) pursuant to the rules of procedure for conducting hearings before the Commissioner of Conservation, R.S. 30:5(C), R.S. 30:6, and §129.C.1 and 2, §129.D.1, 2, and 3 of this Order.
- v. In the event the pilot project is unsuccessful, the operator must submit a letter to the commissioner requesting termination of such project.

E. Permit Notice Requirements

- 1. Applications for saltwater disposal, enhanced recovery wells or projects, and other Class II facilities shall be advertised in the official state journal.
- 2. Notice requirements for commercial saltwater facilities can be found in §129.M of the amendment to Statewide Order 29-B (Section 129) entitled *Offsite Disposal of Drilling Mud and Saltwater* dated July 20, 1980.

3. Public Hearings

- a. If any person protests the application for a saltwater disposal or other Class II facility by filing written comments with the commissioner within 15 days following publication of notice, the application shall be set for public hearing at the election of the applicant or the commissioner.
- b. All enhanced recovery well or project applications shall be approved only after a 30-day comment period and public hearing. The notice of hearing shall be mailed out to each interested owner and to each interested party.
- 4. The commissioner may administratively approve or deny the application for a Class II well other than an enhanced recovery well or project, after review, without a public hearing if there are no comments received during the application comment period. If the commissioner denies administrative approval, the operator shall have a right to a public hearing on the decision.

5. Response to Comments

- a. At the time that any final permit is issued, following a public hearing, the commissioner shall issue a response to comments. This response shall briefly describe and respond to all significant comments on the permit application raised during the public comment period, or during any hearing.
- b. The response to comments shall be available to the public.

F. Duration of Permits

- 1. Permits authorizing injection into enhanced recovery injection wells and disposal wells shall remain valid for the life of the well, unless revoked by the commissioner for just cause.
- 2. A permit granting underground injection may be modified, revoked and reissued, or terminated during its term for cause. This may be at the request of any interested person or at the commissioner's initiative. All requests shall be in writing and shall contain facts or reasons supporting the request.
- 3. A permit may be modified, revoked and reissued, or terminated after notice and hearing, if:
- a. there is a substantial change of conditions in the enhanced recovery injection well or the disposal well operation, or there are substantial changes in the information originally furnished;
- b. information as to the permitted operation indicates that the cumulative effects on the environment are unacceptable, such as pollution of USDW's;
- c. there are substantial violations of the terms and provisions of the permit; and
- d. the operator has misrepresented any material facts during the permit issuance process.

G. Transfer of Permits. A permit authorizing an enhanced recovery injection well or disposal well shall not be transferred from one operator to another without the approval of the commissioner (Form MD-10-R-A).

H. Construction Requirements For New Wells

- 1. Each new enhanced recovery injection well or disposal well shall be completed, equipped, operated and maintained in a manner that will prevent endangerment of USDW's or damage to sources of oil or gas and will confine injected fluids to the interval or intervals approved.
- 2. The casing and cementing program shall conform to the following requirements:
- a. surface casing set through the base of the deepest USDW and cemented back to the surface in accordance with \$109.B.1 of this Order; and
- b. long string casing shall be cemented above the injection zone in accordance with \$109.D.3 of this Order.
- 3. Tubing and Packer. New wells drilled or existing wells converted for disposal after the effective date of this rule shall be equipped with tubing set on a mechanical packer. Packers shall be set no higher than 150 feet above the top of the disposal zone.
- 4. Pressure Valves. The wellhead shall be equipped with aboveground pressure observation valves on the tubing and for each annulus of the well; said valves will be equipped with ½-inch female fittings. Operators of existing wells shall comply with this requirement by no later than six months after adoption of this amendment.
- 5. Well History. Within 20 days after the completion or conversion of a disposal well, the owner or operator shall file in duplicate to the commissioner a completed form WH-1

I. Monitoring and Reporting Requirements

- 1. The operator shall monitor injection pressure and injection rate of each enhanced recovery injection well or disposal well on a monthly basis with the results reported annually on Form SWD-1R-2.
- 2. The operator shall report on Form SWD-1R-2 any casing annulus pressure monitoring used in lieu of pressure testing and any other casing annulus pressure test performed.
- 3. All reports submitted to the Office of Conservation shall be signed by a duly authorized representative of the operator.
- 4. The operator of an enhanced recovery injection well or disposal well shall, within 30 days, notify the commissioner of the date upon which injection or disposal commenced.
- 5. The operator shall request permission from the commissioner for suspension of injection if an injection well or project is to be removed from service for a period of six months or more, and give reasons or justification for such

- suspension of injection. Said permission shall not exceed one year. After one year, the well or well(s) in a project shall be plugged and abandoned as outlined in §137 of this Order. The operator may request a hearing for an extension exceeding one year. Wells required for standby service, provided they meet all requirements for wells in active service, are exempt from the plugging requirements of this Subsection.
- 6. The operator shall, within 30 days notify the commissioner of the date injection into an enhanced recovery injection well, enhanced recovery injection project or disposal well is terminated permanently and the reason therefore; at which time the permit authorizing the well or project shall expire. Notification of project injection termination must be accompanied by an individual well status report for all project injection wells.
- 7. Mechanical failures or downhole problems which indicate an enhanced recovery injection well or disposal well is not, or may not be, directing the injected fluid into the permitted or authorized injection zone may be cause to shutin the well. If said condition may endanger a USDW, the operator shall orally notify the commissioner within 24 hours at (504) 342-5515. Written notice of this failure shall be submitted to the Office of Conservation within five days of the occurrence together with a plan for testing and/or repairing the well. Results of such testing and well repair shall be included in the annual monitoring report to the commissioner. Any mechanical downhole well repair performed on the well not previously reported shall also be included in the annual report.

J. Logging and Testing Requirements

1. New Wells

- a. Before operating a new well drilled for enhanced recovery injection or saltwater disposal, the casing outside the tubing shall be tested under the supervision of the Office of Conservation at a pressure not less than the maximum authorized injection pressure, or at a pressure of 300 psi, whichever is greater.
- b.i. If open-hole logs of a nearby well were not run through the lowermost USDW, a new well shall be logged from the surface to the total depth before casing is set.
- ii. If such logs exist for a nearby well, the new well need only be logged electrically below the surface casing before the longstring is set.
- c. After cementing the casing, a cement bond log, temperature survey, x-ray log, density log or some other acceptable test shall be run to assure there are no channels adjacent to the casing which will permit migration of fluids up the wellbore from the disposal formation to the lowermost USDW. The casing program shall be designed for the lifetime of the well.
- 2. Converted Wells. Before operating an existing well newly converted to enhanced recovery injection or disposal, the casing outside the tubing shall be tested under supervision of the Office of Conservation at a pressure of

1000 psi or maximum authorized injection pressure, whichever is less, provided no testing pressure shall be less than 300 psi.

3. Existing Wells

- a. An injection well has mechanical integrity if:
- i. there is no significant leak in the casing, tubing or packer; and
- ii. there is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection wellbore.
- b. One of the following methods must be used to evaluate the absence of significant leaks under Paragraph 3.a.i above:
 - i. monitoring of annulus pressure; or
 - ii. pressure test with liquid; or
- iii. records of monitoring showing the absence of significant changes in the relationship between injection pressure and injection flow rate for the following enhanced recovery wells:
- (a). existing wells completed without a packer provided that a pressure test has been performed and the data is available and provided further that one pressure test shall be performed at a time when the well is shut down and if the running of such a test will not cause further loss of significant amounts of oil or gas; or
- (b). existing wells constructed without a longstring casing, but with surface casing which terminates at the base of the lowest USDW provided that local geological and hydrological features allow such construction and provided further that the annular space shall be visually inspected. For these wells, the commissioner shall prescribe a monitoring program which will verify the absence of significant fluid movement from the injection zone into an USDW.
- c. One of the following methods must be used to determine the absence of significant fluid movement under Paragraph 3.a.ii above:
- i. cementing records demonstrating the presence of adequate cement to prevent such migration; or
 - ii. the results of a temperature or noise log.
- d. The commissioner may approve a request for the use of a test to demonstrate mechanical integrity other than those listed in Paragraphs 3.b and c above, if the proposed test will reliably demonstrate the mechanical integrity for wells for which its use is proposed.
- e. Each disposal and enhanced recovery well shall demonstrate mechanical integrity at least once every five years. The commissioner will prescribe a schedule and mail notification to operators to allow for orderly and timely compliance with this requirement.
- 4. The operator shall notify the commissioner at least 48 hours prior to the testing. Testing shall not commence

before the end of the 48-hour period unless authorized by the commissioner. The commissioner may authorize or require alternative tests or surveys as is deemed appropriate and necessary.

- 5. A complete record of all mechanical integrity pressure tests shall be made out, verified and filed in duplicate on the Form PLT# 1 within 30 days after the testing.
- K. Confinement of Fluids. If the operator or the commissioner determines that the disposal operation is causing fluid to enter an unauthorized stratum or to escape to the land surface, the operator shall shut-in the disposal well immediately and notify the commissioner by telephone within 24 hours at (504) 342-5515. Injection into the disposal well shall not be resumed until the commissioner has determined that the well is in compliance with all material permit conditions. If the certificate of compliance is not issued within 90 days, the permit shall be canceled and the disposal well shall be plugged and abandoned in accordance with §137.
- L. Enhanced recovery injection wells and disposal wells shall be plugged in accordance with the provisions of the commissioner's rules governing the plugging of oil and gas wells, as found in §137.
- M. Off-site Storage, Treatment and/or Disposal of Nonhazardous Oilfield Waste Generated From Drilling and Production of Oil and Gas Wells

1. Definitions

Application Phase—an identifiable period of time during which NOW waste receipts are applied to a land treatment cell.

Cell—an carthen area constructed within a land treatment facility used for the placement, treatment, disposal and degradation of nonhazardous oilfield waste.

Closed System—a system in which nonhazardous oilfield waste is stored in enclosed tanks or barges prior to being treated and/or disposed of. Pits are not utilized in a closed system.

Commercial Facility—a legally permitted waste storage, treatment and/or disposal facility which receives, treats, reclaims, stores, or disposes of nonhazardous oilfield waste for a fee or other consideration.

Commissioner—the commissioner of Conservation of the state of Louisiana.

Community Saltwater Disposal Well or System—a saltwater disposal well within an oil or gas field which is used by operators in the field or adjacent fields for disposal of their produced water.

Generator—any person or entity who generates or causes to be generated any nonhazardous oilfield waste (NOW), sometimes referred to as "operator".

Groundwater Aquifer—as defined in §129.B.

Inactive Cell—a land treatment cell which is not used for NOW receipts or has been taken out of service by a land treatment facility. Such cell may be considered inactive only if it is a new cell which has not yet received waste or an existing cell which is in compliance with the applicable testing criteria of §129.M.

Land Treatment—a dynamic process involving the controlled application of nonhazardous oilfield waste onto or into the aerobic surface soil horizon by a commercial facility, accompanied by continued monitoring and management, to alter the physical, chemical, and biological state of the waste. Site, soil, climate, and biological activity interact as a system to degrade and immobilize waste constituents thereby rendering the area suitable for the support of vegetative growth and providing for beneficial future land use.

Offsite—for purposes of this Section, outside the confines of a drilling unit for a specific well or group of wells, or in the absence of such a unit, outside the confines of a lease or contiguous property owned by the lessor upon which a well is drilled.

NOW-nonhazardous oilfield waste.

Nonhazardous Oilfield Waste (NOW)—waste generated by the drilling and production of oil and gas wells and which is not regulated by the provisions of the Louisiana Hazardous Waste Regulations. Such wastes include the following:

- a. salt water (produced brine or produced water), except for salt water whose intended and actual use is in drilling, workover or completion fluids or in enhanced mineral recovery operations;
 - b. oil-base drilling mud and cuttings;
 - c. water-base drilling mud and cuttings;
 - d. drilling, workover and completion fluids;
 - e. production pit sludges;
 - f. production storage tank sludges;
 - g. produced oily sands and solids;
 - h. produced formation fresh water;
- i. rainwater from ring levees and pits at production and drilling facilities;
- j. washout water generated from the cleaning of vessels (barges, tanks, etc.) that transport nonhazardous oilfield waste and are not contaminated by hazardous waste or material;
- k. washout pit water from oilfield related carriers that are not permitted to haul hazardous waste or material;
- l. nonhazardous natural gas plant processing waste which is or may be commingled with produced formation water;

- m. waste from approved salvage oil operators who only receive waste oil (BS&W) from oil and gas leases;
- n. pipeline test water which does not meet discharge limitations established by the appropriate state agency, or pipeline pig water, i.e., waste fluids generated from the cleaning of a pipeline;
- o. wastes from permitted commercial facilities;
- p. material used in crude oil spill clean-up operations.

Oil-Based Drilling Muds—any oil-based drilling fluid composed of a water in oil emulsion, organophillic clays, drilled solids and additives for down-hole rheology and stability such as fluid loss control materials, thinners, weighting agents, etc.

Pit—an earthen surface impoundment constructed to retain nonhazardous oilfield waste, often referred to as a pond or lagoon.

Reusable Material—a material that would otherwise be classified as nonhazardous oilfield waste, but which is capable of resource conservation and recovery and has been processed in whole or in part for reuse. To meet this definition, the material must have been treated physically, chemically, or biologically or otherwise processed so that the material is significantly changed (i.e., the new material is physically, chemically, or biologically distinct from the original material), and meets the criteria of §129.M.8.F.

Salt Water (Produced Brine)—produced water from an oil or gas well with a chloride content greater than 500 ppm.

Transfer Station—a nonhazardous oilfield waste receiving and storage facility, located offsite, but operated at an approved location in conjunction with a permitted commercial facility, which is used for temporary storage of manifested nonhazardous oilfield waste for a period of 30 days or less.

Transporter—a legally permitted carrier of nonhazardous oilfield waste contained in trucks, barges, boats, or other transportation vessels.

Treatment Phase—the period of time during which NOW in a land treatment cell is physically manipulated and/or chemically altered (through the addition of chemical amendments, etc.) to bring the cell into compliance with the testing criteria or reuse criteria of §129.M.

Treatment Zone—the soil profile in a land treatment cell that is located wholly above the saturated zone and within which degradation, transformation, or immobilization of NOW waste constituents occurs. The treatment zone is subdivided as follows:

a. Waste Treatment Zone (WTZ)—the active waste treatment area consisting solely of the NOW solids applied to a land treatment cell during the application phase, exists entirely above grade (original cell bottom), and whose actual depth depends on the solids content of the NOW

applied. For monitoring purposes the WTZ represents the 0-12" depth increment.

- b. *Upper Treatment Zone (UTZ)*—the waste/native soil (original cell bottom) interface in a land treatment cell where some disturbance occurs as a result of waste treatment/manipulation. For monitoring purposes, the UTZ represents the 12-24" depth increment.
- c. Lower Treatment Zone (LTZ)—the zone beneath the UTZ in a land treatment cell from approximately 24-54" (or to the top of the subsurface drainage system) which remains undisturbed throughout the life of a land treatment cell.

Type A Facility—a commercial oilfield waste disposal facility within the state that utilizes technologies appropriate for the receipt, treatment, storage or disposal of oilfield waste solids and liquids for a fee or other consideration. Such facility may include not more than three underground injection wells at the permitted facility.

Type B Facility—a commercial oilfield waste disposal facility within the state that utilizes underground injection technology for the receipt, treatment, storage and disposal of only produced saltwater, oilfield brine, or other oilfield waste liquids for a fee or other consideration. Such facility may include not more than three underground injection wells at the permitted facility.

Water-Based Drilling Muds—any water-based fluid composed of fresh water, naturally occurring clays, drilled solids and additives for fluid loss control, viscosity, thinning, pH control, weight control, etc., for down-hole rheology and stability.

- 2. Offsite Storage, Treatment, and/or Disposal of Nonhazardous Oilfield Waste at Commercial Facilities (Note: Onsite disposal requirements are listed in §129.B)
 - a. Generators of Nonhazardous Oilfield Waste
- i. For NOW taken offsite for storage, treatment, or disposal, the generator is responsible for the proper handling and transportation of such waste to assure its proper delivery to an approved commercial facility. Failure to properly transport such waste shall subject the generator to penalties provided for in R.S. 30:18. Each shipment must be documented as required by §129.M.6.
- ii. Any spills which occur during the offsite transportation of NOW shall be reported to the Office of Conservation, including the appropriate state and federal agencies, within 24 hours of the spill.
- iii. Operators (generators) are required to report the discovery of any unauthorized disposal of NOW by transporters, pit treaters, or any other oilfield contracting company.
- iv. Within six months of the completion of the drilling or workover of any permitted well, the operator (generator) shall certify to the commissioner the type(s) and number of barrels of NOW generated, the disposition of such waste, and certify further that such disposition was in

accordance with applicable rules and regulations of this office. Such certification shall become part of the well's permanent history.

- b. Approval of Commercial Facility Required. The storage, treatment, and/or disposal of NOW by a commercial facility must be approved by the commissioner as provided in this Section. Subsurface disposal of salt water is required and regulated by other applicable Subsections of §129. The requirements of this Section do not apply to either lease saltwater disposal wells or to community saltwater disposal wells. The unpermitted or authorized storage, treatment, disposal or discharge of NOW is prohibited and is a violation of these rules.
- c. Approval of Transfer Station Required. The construction and operation of a transfer station must be approved by the commissioner upon submission of a permit application according to the requirements of §129.M.3.g.
- d. Location Criteria. Commercial facilities and associated saltwater disposal wells may not be located in any area:
- i. where the disposal well or related storage tanks, pits, treatment facilities or other equipment are within 500 feet of a residential, commercial, or public building, unless adherence to this requirement is waived by the owner of the building, or in the case of a public building, by the responsible administrative body. Any such waiver shall be in writing and must be made part of the permit application;
- ii. where the subsurface geology of any proposed injection zone (reservoir) does not exhibit the following characteristics:
- (a). adequate thickness and areal extent of the proposed injection zone; and
- (b). adequate clay confining beds separating the top of the proposed injection zone and the base of the lowermost underground source of drinking water;
- iii. where pits or land treatment cells and facilities are located in a "V" or A zone as determined by flood hazard boundary or rate maps and other information published by the Federal Emergency Management Agency (FEMA) unless adequate levees are constructed to at least 1 foot above the 100-year flood elevation as certified by a professional engineer or surveyor and able to withstand the velocity of the 100-year flood. Said maps and data are on file and may be viewed by interested parties at the Office of Conservation, Injection and Mining Division, Baton Rouge, La. Existing facilities located in a "V" or A zone will be required to build facility levees above the 100-year flood elevation as certified by a professional engineer or land surveyor. As conditions change and new data is made available by FEMA, owners of existing commercial facilities will be required to update their facilities accordingly;
- iv. where such area, or any portion thereof, has been designated as wetlands by the U.S. Corps of Engineers during, or prior to, initial facility application review;

both

v. where other surface or subsurface conditions exist which in the determination of the commissioner of Conservation would cause the location to pose a threat of substantial, adverse effects on the environment at or near the location.

e. Design Criteria

- i. Commercial facilities, associated saltwater disposal wells, and transfer stations shall be designed in such a manner as to prevent the movement of waste materials into groundwater aquifers or underground sources of drinking water (USDW's) or to prevent the discharge of waste materials into man-made or natural drainage or directly into state waters unless a discharge permit has been received from the appropriate state or federal agency.
- ii. Commercial facilities and transfer stations shall be designed and constructed in accordance with, but not limited to, the following requirements:
- (a). $\S 129$ and other applicable Sections of this order:
- (b). retaining walls (levees) shall be built around all above-ground storage tanks to a level that will provide sufficient capacity to retain the contents of each tank and prevent the escape of stored wastes due to tank leakage, or some other cause;
- (c). spill containment systems shall be built around unloading areas to prevent the escape of any wastes spilled during off-loading; and
- (d). limited access shall be provided by a lockable gate system. In addition, the need for a 6-foot chain-link fence around an entire facility or any portion of a facility will be determined after a site investigation by the commissioner or his designated representative. Gates shall be locked except during the hours a facility is permitted to receive nonhazardous oilfield waste.
- 3. Permit Application Requirements for Commercial Facilities and Transfer Stations
- a. Application and Permit Required. Every person who intends to construct and operate a new offsite commercial facility, or make a major modification to an existing facility, shall file a permit application with the Office of Conservation.

b. Notice of Intent

- i. At least 30 days prior to filing such application, the applicant shall publish a notice of intent to apply. Such notice shall contain sufficient information to identify the following:
 - (a), name and address of the applicant:
 - (b). the location of the proposed facility;
- (c). the nature and content of the proposed waste stream(s);
- (d). the method(s) of storage, treatment, and/or disposal to be used.

ii. The notice of intent shall be published in

the official state journal, *The State Times*, and the official journal of the parish in which the proposed facility will be located.

- iii. Such notice shall be in bold-face type and not less than one-quarter page in size and shall be published on three separate days in each journal.
- c. General Information. Except for the filing and hearing fees, the following general information must be provided in duplicate in each application for approval to operate a commercial facility:
 - i. a \$500 nonrefundable filing fee;
 - ii. a \$600 nonrefundable hearing fee;
- iii. a list of names and addresses of the principal officers of the company or corporation;
- iv. documentation of compliance with the location criteria of §129.M.2.d.i. Provide a list of the names and addresses of all property owners, residents, off-set operators and industrial facilities within one-quarter mile of the proposed facility or disposal well. Include copies of waivers where applicable. Names and addresses of local governing authorities must also be included. Attached to this list must be a simplified drawing (map) showing the following information:
- (a). property boundaries of the commercial facility;
- (b). the boundaries and ownership of all land adjacent to the commercial facility;
- (c). the location and identification of all storage tanks and/or pits, treatment facilities, the disposal well, and all residential, commercial, or public buildings within one-quarter mile of the facility;
- v. for operators proposing the construction and operation of a disposal well, complete the appropriate application form, including all required attachments;
- vi. a copy of the title to the property upon which the facility will be located. If a lease or other agreement is in effect on the property, a copy of this instrument shall be included in the application;
- vii. a parish map of sufficient scale to identify the location of the proposed facility;
- viii. a detailed statement of the proposed method of operation of the facility, including procedures for the receipt, storage, treatment and/or disposal of wastes. This statement shall include a complete explanation of procedures for witnessing the receipt, sampling, and testing of wastes to assure that only permitted nonhazardous oilfield wastes are accepted;
- ix. documentation that the facility and/or disposal well will have limited access through a lockable gate system with appropriate fencing.
 - x. Financial Responsibility (Insurance)

- (a). Evidence of financial responsibility for any liability for damages which may be caused to any party by the escape or discharge of any material or waste from the commercial facility or transfer station must be provided by the applicant prior to issuance of a permit.
- (b). Financial responsibility may be evidenced by filing a certificate of insurance (indicating the required coverage is in effect and all deductible amounts applicable to the coverage), letter of credit, bond, certificate of deposits issued by and drawn on Louisiana banks, or any other evidence of equivalent financial responsibility acceptable to the commissioner.
- (c). In no event shall the amount and extent of such financial responsibility be less than the face amounts per occurrence and/or aggregate occurrences as set by the commissioner below:
- (i). 1,000,000 minimum coverage for facilities which operate open pits; or
- (ii). \$500,000 minimum coverage for any other commercial facility which stores, treats or disposes of nonhazardous oilfield waste solids (i.e. oil- or water-base drilling fluids, etc.); or
- (iii). \$250,000 minimum coverage for a commercial salt water disposal facility which utilizes underground injection and a closed storage system; and
- (iv). \$100,000 minimum coverage for each transfer station operated in conjunction with a legally permitted commercial facility subject to the guidelines of this Paragraph.

NOTE: The commissioner retains the right to increase the face amounts set forth above as needed in order to prevent waste and to protect the public health, safety, and welfare.

- (d). If insurance coverage is used to meet the financial responsibility requirement, it must be provided by a company licensed to operate in the state of Louisiana.
- (e). For a commercial facility which operates open earthen pits, such insurance must provide sudden and accidental pollution liability coverage as well as environmental impairment liability coverage.
- (f). For any commercial facility or transfer station which does not operate open earthen pits, such insurance must provide sudden and accidental pollution liability coverage.
- (g). The application shall contain documentation of the method by which proof of financial responsibility will be provided by the applicant. Where applicable, include copies of a draft letter of credit, bond, or any other evidence of financial responsibility acceptable to the commissioner.
- (h). Prior to making a final permit decision, final (official) documentation of financial responsibility must be submitted to and approved by the commissioner.
- (i). A copy of the insurance policy subsequently issued in conjunction with any certificate of insurance is to

be immediately filed with the Office of Conservation upon receipt by the operator.

- (j). Such documentation of financial responsibility must be renewable on April 1 of each year. Existing facilities must comply with this requirement upon the next renewal date.
- xi. Provisions for Adequate Closure (Bonding)
- (a). Documentation that a bond or irrevocable letter of credit will be provided for adequate closure of the facility. Such documentation shall be provided as follows:
- (i). Submission of a detailed cost estimate for adequate closure of the proposed facility. This cost estimate must include a detailed description of proposed future closure procedures including, but not limited to, plugging and abandonment of the disposal well(s) (if applicable), plugging of any monitor wells according to applicable state regulations, closing out any pits or land treatment cells, removing all surface equipment, and returning the environment as close as possible to its natural state. The closure plan and cost estimate must be prepared by an independent professional consultant, must include provisions for closure acceptable to the commissioner, and must be designed to reflect the costs to the commissioner to complete the approved closure of the facility.
- (ii). Submission of a draft irrevocable letter of credit or bond in favor of the state of Louisiana and in a form which includes wording acceptable to the commissioner.
- (b). Upon completion of the application review process, the commissioner will set the amount of the required bond or irrevocable letter of credit.
- (c). The bond or letter of credit must then be submitted to and approved by the commissioner prior to issuance of a final permit decision.
- (d). The bond or letter of credit must be renewable on October 1 of each year. Existing facilities must comply with this requirement upon the next renewal date.
- xii. Verification that a discharge permit has been obtained from the appropriate state or federal agencies or copies of any applications submitted to such agencies. If a facility does not intend to discharge treated waste water or other water, a completed and notarized Affidavit of No Discharge must be provided.
- xiii. In order to document compliance with the location criteria of \$129.M.2.d.ii, commercial facilities which propose to permit a disposal well must provide strike and dip geologic cross sections intersecting at the location of the disposal well for which a permit is sought. These cross sections must include, at a minimum, available log control, geologic units, and lithology from the surface to the lower confining bed below the injection zone. The sections shall be on a scale sufficient to show the local geology in at least a two-mile radius from the proposed disposal well. The

following information must be included on these cross-sections:

- (a). the base of underground sources of drinking water (USDW's);
- (b). the vertical and lateral limits of the proposed injection zone (reservoir);
- (c). the vertical and lateral limits of the upper and lower confining beds; and
- (d), the location of faults or other geologic structures.
- xiv. A list of all other licenses and permits needed by the applicant to conduct the proposed commercial activities. Include identification number of applications for those permits or licenses or, if issued, the identification numbers of the permits or licenses.
- d. Additional Permit Application Requirements for Closed Systems
- i. In addition to the information requested in §129.M.3.c above, the following information must be provided in duplicate in each application for approval of a closed system:

A detailed schematic diagram of the proposed facility of sufficient scale to show placement of access roads, buildings, unloading areas, storage tanks or barges (including design capacities), treatment system, levees, flow lines, filters, the injection well and all other equipment and operational features of the storage, treatment and/or disposal system.

- ii. Documentation of compliance with the location criteria of §129.M.2.d.iv.
- e. Additional Permit Application Requirements for Commercial Facilities Utilizing Pits for Temporary Storage of NOW Solids

Pits will not be approved for the permanent disposal of NOW. The construction and use of a receiving pit for temporary storage of NOW may be approved if the requirements of this Subparagraph are met. A receiving pit for temporary storage will only be approved for use as a gathering, collection, and/or temporary storage location if specifically designed for use in connection with a NOW treatment system (i.e. land treatment, chemical fixation, physical dewatering, incineration, etc.). Any proposed pit for temporary storage is not to be constructed until a permit for the NOW treatment system has been issued. Such temporary storage pit must be located on the site of the permitted NOW treatment system and such pit may not exceed a design capacity of more than 50,000 barrels.

In addition to the information requested in §129.M.3.c above, the following information must be provided in duplicate in each application for approval of a commercial facility incorporating the use of a pit:

NATURAL RESOURCES

- i. A detailed schematic diagram of the proposed facility of sufficient scale to show placement of access roads, buildings, unloading areas, monitor well(s), pits, storage tanks, treatment system, flow lines, filters, the injection well and all other equipment and operational features of the storage, treatment, and/or disposal system. The diagram must include the dimensions and design capacity (in barrels) of each proposed pit, tank or barge. The diagram shall also include the following information:
- (a). the location and elevation of each soil boring required in §129.M.3.e.iv below;
- (b). the location and elevation of each monitor well required in §129.M.3.e.vi below;
 - (c). the elevation for the top of each levee;
- (d). the elevation of the bottom (base) of each pit;
 - (e). the elevation of the 100-year flood level;
- (f). the general location of groundwater aquifers and USDW's under the site and general direction(s) of area groundwater flow.
- ii. Documentation of compliance with the location criteria of §129.M.2.d.iii and iv.
- iii. Documentation must be presented which indicates that groundwater and USDW protection shall be provided by one of the following:
- (a). A liner along the bottom and sides of pits which has the equivalent of 5 continuous feet of recompacted or natural clay having a hydraulic conductivity no greater than 1×10^{-7} cm/sec. Such liners include, but are not limited to the following:
- (i). *Natural Liner*—recompacted natural clay having a hydraulic conductivity meeting the requirements of (a) above.
- (ii). Soil Mixture Liner—soil mixed with cement, clay-type, and/or other additives to produce a barrier which meets the hydraulic conductivity requirements of (a) above.
- (iii). Recompacted Clay Liner—in situ or imported clay soils which are compacted or restructured to meet the hydraulic conductivity requirement of (a) above.
- (iv). Manufactured Liner—synthetic material that meets the definition of §129.B.1 and is equivalent to or exceeds the hydraulic conductivity requirements of (a) above. Pits constructed with a manufactured liner must have side slopes of 3:1 and the liner at the top of the pit must be buried in a 1' wide and 1' deep trench. A sufficient excess of liner material shall be placed in the pit to prevent tearing when filled with NOW.
- (v). Combination Liner—a combination of two or more types of liners escribed in this Section which meets the hydraulic conductivity requirements of (a) above.

(b). Any other alternate groundwater aquifer and USDW protection system acceptable to the Office of Conservation.

- iv. The determination of near-surface geological conditions shall be made by soil borings. These borings shall be made prior to construction of any proposed pit. Specific requirements for soil borings and soil testing according to ASTM methods are as follows:
- (a). Soil borings and soil testing shall be performed by an independent engineering or geotechnical soil testing company or laboratory.
- (b). The number and locations of borings shall be sufficient to develop an accurate representation of the subsurface conditions at all points beneath the pit(s) and shall be determined in consultation with the commissioner.
- (c). The soil borings shall be sampled to at least 10 feet below the bottom of the maximum pit excavation, and they must be continuously sampled to at least 5 feet below maximum excavation.
- (d). Upon completion of the borings, groundwater levels should be obtained and the boreholes shall be adequately sealed by plugging with a cement/bentonite slurry from the bottom up to the ground surface.
- (e). The logs of all borings made on-site, together with associated laboratory testing to classify soils and to measure soil strength, permeability and other related parameters, shall be submitted.
- v. A cross section showing the proposed placement and type of materials to be used in the construction of the pit levees. The levees must be constructed of soils which are placed and compacted in such a manner as to produce a barrier to horizontal movement of fluids. The levees must be properly tied into the barrier along the bottom and sides of the pits. Actual construction of the levees must be monitored and documented by a professional engineering or geotechnical soil testing company. Documentation that a barrier exists within the levee which consists of at least 3 feet of soil with a hydraulic conductivity of 1.0 x 10⁻⁷ cm/sec or less must be provided. All levees must be provided with a means to prevent erosion and other degradation.
- vi. A schematic diagram depicting the proposed or actual construction of each monitor well. A minimum of three monitor wells will be required to insure that any seepage into a groundwater aquifer or USDW beneath the pit(s) will be detected prior to leaving the disposal site's perimeter. Monitor wells shall be certified by a professional engineer, hydrologist or geologist as adequate to detect any contamination. Additional monitor wells may be required; the number and location of additional wells will be determined upon review of the pit size(s) and configuration(s) and base line water quality data.
- f. Additional Permit Application Requirements for Land Treatment Systems. In addition to the information requested in §129.M.3.c, the following information must be

- provided in duplicate in each application for approval of a commercial facility incorporating the use of land treatment cells:
- i. include a detailed description of the site considered for land treatment with relation to the following:
 - (a). past and present land use,
 - (b). geology/soil properties/hydrogeology,
 - (c). drainage and flood control,
 - (d). hydrologic balance, and
 - (e). highest seasonal groundwater level;
- ii. provide a detailed description of the facility design including maps and drawings and a discussion of the following:
 - (a). site layout,
 - (b). proposed waste application technique,
 - (c). drainage control,
 - (d). proposed waste loading rate, and
 - (e). expected facility life;
- iii. submit an explanation of the proposed management plan with reference to the following topics:
 - (a). sampling and testing of incoming waste,
 - (b). method of receiving waste,
 - (c). waste segregation,
 - (d). application scheduling,
 - (e). waste-soil mixing, and
- (f). proposed land treatment cell and groundwater monitoring plan;
- iv. provide detailed information concerning closure and post-closure activities and monitoring as follows:
 - (a). proposed closure procedures,
 - (b). post-closure maintenance, and
 - (c). closure and post-closure monitoring;
- v. documentation of compliance with the location criteria of §129.M.2.d.iii and iv;
- vi. documentation shall be provided that indicates the requirements of §129.M.7.
- g. Permit Application Requirements for a Transfer Station
- i. The application for construction and operation of a transfer station by an existing Louisiana commercial facility permitted by the Office of Conservation shall include, but may not be limited to the following information:

- (a). a statement of the proposed method of operation of the transfer station, including, but not limited to, the following:
 - (i). a description of the storage system;
- (ii). a statement as to the method of transportation of waste to and from the transfer station; and
- (iii). a statement as to the final disposition of the waste;
- (b). documentation that sudden and accidental pollution coverage (liability insurance) in the amount of \$100,000 is in effect for the transfer station;
- (c). documentation of compliance with the bonding requirements of §129.M.3.c.xi;
- (d). a parish map of sufficient scale upon which the location of the proposed transfer station is identified;
 - (e). a schematic drawing showing the following:
- (i). the boundaries of the land, owned or leased, upon which the transfer station is operated;
- (ii). the location and identification of all storage tanks or barges (including design capacities), access roads, buildings, unloading areas, levees, flow lines, filters, and other operational equipment;
- (f). a copy of the title of the property upon which the transfer station will be located, or if a lease or other agreement is in effect on the property, a copy must be included in the application;
- (g). documentation of compliance with the location criteria of §129.M.2.d.i.
- ii. The application for construction and operation of a transfer station by the operator of an out-of-state, legally permitted commercial facility shall consist of the following:
- (a). compliance with the notice of intent requirements of §129.M.3.b;
- (b). submission of the information required in §129.M.3.c;
- (c). a detailed schematic diagram of the proposed transfer station of sufficient scale to show the location of access roads, buildings, unloading areas, storage tanks or barges (including design capacities), any treatment system, levees, flow lines, filters, and all other equipment and operational features of the transfer facility;
- (d). submission of a copy of any permits issued by the appropriate regulatory agencies of the state in which the out-of-state commercial facility is located.

4. Permitting Procedures

a. The Office of Conservation will review a new commercial facility application or transfer station application within 90 days of receipt and inform the applicant of its completeness.

- b. If the application is not complete, the applicant shall be advised of additional information to be submitted for approval or the application shall be returned and the applicant will be required to resubmit the application.
- c. Upon acceptance of the application as complete, the Office of Conservation shall set a time and date and secure a location for the required public hearing to be held in the affected parish.
- d. At least 30 days prior to the hearing, the applicant is required to file six copies of the complete application with the local governing authority of the parish in which the proposed facility is to be located to be made available for public review.

e. Public Hearing Notice Requirements

- i. Upon acceptance of the application as complete, the Office of Conservation shall publish in the next available issue of the *Louisiana Register*, a notice of the filing and the location, date and time of the public hearing to be held in the affected parish. Such public hearing shall not be less than 30 days from the date of notice in the *Louisiana Register*.
- ii. At least 30 days prior to the scheduled public hearing, the Office of Conservation shall publish in *The State Times* a notice of the filing of the application and the location, date and time of the hearing.
- iii. The applicant shall publish a substantially similar notice in the official journal of the affected parish on three separate days at least 15 days prior to the date of the hearing. Such notice shall not be less than one-quarter page in size and printed in bold-face type.
- f. The public hearing shall be fact finding in nature and not subject to the procedural requirements of the Louisiana Administrative Procedure Act. All interested persons shall be allowed the opportunity to present testimony, facts, or evidence related to the application or to ask questions.

g. Permit Issuance

- i. The commissioner shall issue a final permit decision within 90 days of the closing of the public comment period.
- ii. A final permit decision shall become effective on the date of issuance.
- iii. Approval or the granting of a permit to construct a commercial facility (and any associated disposal well) shall be valid for a period of one year and if construction is not completed in that time, the permit shall be null and void. Requests for an extension of this one year requirement may be approved by the commissioner for extenuating circumstances only.
- h. The application for construction and operation of a new or additional transfer station by an existing commercial facility permitted by the Office of Conservation shall either be administratively approved or denied.

- 5. Criteria for the Operation of Commercial Facilities and Transfer Stations
- a. Commercial facilities and transfer stations shall be operated in compliance with, but not limited to, the following:
- i. The area within the confines of tank retaining walls (levees) shall be kept free of debris, trash, and accumulations of oil or other materials which may constitute a fire hazard. Portable gasoline powered engines and pumps must be supervised at all times of operation and stored at least 50' from tank battery firewalls when not in use. Vent lines must be installed on all NOW storage tanks and must extend outside of tank battery firewalls.
- ii. The area within the confines of tank retaining walls (levees) must be kept free of accumulations of water. This water shall be properly disposed of or discharged in accordance with the conditions of a discharge permit granted by the appropriate state agency.
- iii. Pit and land treatment cell levees shall be kept free of debris, trash, or overgrowth which would constitute a fire hazard or hamper or prevent adequate inspection.
- iv. Pit surfaces shall at no time have an accumulation of oil of more than 2 inches.
- v. Pit levels shall be maintained with at least 2 feet of freeboard at all times.
- vi. Tank retaining walls (levees) must be constructed of soils which are placed and compacted in such a manner as to produce a barrier to horizontal movement of fluids. The levees must be properly tied into the barrier along the bottom and sides of the levees. All levees must be provided with a means to prevent crosion and other degradation.
- b. All facilities and systems of treatment, control, and monitoring (and related appurtenances) which are installed or used to achieve compliance with the conditions of a permit shall be properly operated and maintained at all times.
- c. Inspection and entry by Office of Conservation personnel shall be allowed as prescribed in R.S. 30:4.

d. Notification Requirements

i. Any change in the principal officers, management, or ownership of an approved commercial facility must be reported to the commissioner in writing within 10 days of the change.

ii. Transfer of Ownership

- (a). A commercial facility permit may be transferred to a new owner or operator only upon approval by the commissioner.
- (b). The current permittee shall submit an application for transfer at least 30 days before the proposed transfer date. The application shall contain the following:

- (i). name and address of the proposed new owner (permittee);
 - (ii). date of proposed transfer; and
- (iii). a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, insurance coverage, and liability between them.
- (c). If no agreement described in Subclause (b)(iii) above is provided, responsibility for compliance with the terms and conditions of the permit and liability for any violation will shift from the existing permittee to the new permittee on the date the transfer is approved.
- iii. Commercial facility and transfer station operators shall give written notice to the commissioner of any planned physical or operational alterations or additions to a permitted facility or proposed changes in the waste management plan. Requests to make such changes must be submitted to and approved by the commissioner prior to beginning construction or accomplishing the change by other means.
- iv. The operator of a newly approved commercial facility, transfer station, and/or disposal well must notify the commissioner when construction is complete. The operator shall not commence receiving nonhazardous oilfield waste or injecting salt water until the facility has been inspected for compliance with the conditions of the permit and the disposal well has been tested for mechanical integrity.
- v. An operator of a commercial facility or transfer station shall report to the commissioner any noncompliance, including but not limited to those which may endanger public health or safety or the environment. Such notice shall be made orally within 24 hours of the noncompliance and followed by written notification within five days explaining details and proposed methods of corrective action.
- vi. When a commercial facility or transfer station operator refuses to accept a load of waste (other than nonhazardous oilfield waste), he shall notify the Office of Conservation immediately, providing the names of the generator and transporter of the waste.

e. Hours of Receiving

- i. Commercial facilities and transfer stations shall be adequately manned during hours of receiving and shall receive nonhazardous oilfield waste by truck during daylight hours only. Daylight hours shall be defined as the daily hours for sunrise and sunset as listed in table Number 1119 entitled "Sunrise and Sunset at Baton Rouge, Louisiana," prepared by the Nautical Almanac Office, United States Naval Observatory, Washington, DC 20390.
- ii. The commissioner may grant approval for after hours (nighttime) receipt of nonhazardous oilfield waste by a commercial facility or transfer station (by truck) when an emergency condition exists which may endanger public health or safety or the environment. Generators shall

be responsible for obtaining prior approval for nighttime hauling by calling the Office of Conservation at 504/342-5515. When such approval has been granted, the Office of Conservation shall notify both the commercial facility which will receive the waste and the state police.

iii. Commercial facilities or transfer stations with barge terminals may receive NOW transported by barge on a 24-hour a day basis.

f. Monitoring of Injection Wells

- i. Except during approved workover operations, a positive pressure of no less than 100 psi shall be maintained on the well annulus at all times. In addition, an injection volume recorder (tamper proof meter) must be installed and properly maintained on the injection line of each disposal well system. Injected volumes must be recorded monthly and reported annually on the annual injection well report.
- ii. Except during approved workover operations, wells shall be equipped with pressure gauges located on the wellhead, and situated so as to monitor the pressure of the injection stream and the pressure of the annular space between the easing and the injection string.
- iii. The pressure gauges shall have half-inch fittings, be scaled in increments of not more than 10 psi, and be maintained in good working order at all times.
- iv. A daily pressure monitoring log shall be maintained by the operator of the facility and shall contain the following information:
 - (a). the date;
 - (b). the operator's name and address;
 - (c). the well name, number and serial number;
 - (d). the monitored injection pressure;
 - (e). the monitored annulus pressure;
- (f). whether or not the well was injecting at the time the pressures were recorded; and
- (g). the name or initials of the person logging the information.
- v. The pressure gauges shall be read and pressures recorded in the daily log.
- vi. The daily log information shall be recorded on the appropriate form and submitted to the Office of Conservation within 15 days of the end of each month.
- vii. Any discrepancies in the monitored pressures, which would indicate a lack of mechanical integrity and constitute noncompliance with applicable sections of this order, shall be reported to the Office of Conservation within 24 hours.
- g. Discharges from land treatment cells, pits, tanks, and/or barges into man-made or natural drainage or directly into state waters will be allowed only after the necessary discharge permit has been obtained from the appropriate

state and/or federal agencies and in accordance with the conditions of such permit.

- h. Monitor Well Sampling and Testing Requirements for Facilities with Temporary Storage Pits
- i. Water samples from monitor wells shall be sampled by an independent professional consultant and analyzed by an independent testing laboratory. Samples shall be analyzed for pH, electrical conductivity (EC), chloride (C1), sodium (Na), total dissolved solids (TDS), total suspended solids (TSS), oil and grease (percent), As, Ba, Cd, Cr, Pb, Hg, Se, Ag, and Zn.
- ii. Water from newly constructed monitor wells on new facilities shall be sampled and analyzed prior to receipt of waste materials by the facility to provide baseline data for the monitoring system. This data shall be submitted to the Office of Conservation to be made part of the facility's permanent file.
- iii. Water from monitor wells on existing facilities shall be sampled and analyzed on a quarterly basis, with a copy of the analysis submitted to the Office of Conservation within 15 days of the end of each quarter.
- i. Receipt, Sampling and Testing of Nonhazardous Oilfield Waste
- i. Only NOW (as defined in §129.M.1) from approved generators of record may be received at commercial facilities or transfer stations. Other generators of NOW must receive written approval of the Office of Conservation in order to dispose of approved waste at a commercial facility.
- ii. Before offloading at a commercial facility or transfer station, each shipment of nonhazardous oilfield waste shall be sampled and analyzed (by facility personnel) for pH, conductivity, and chloride (Cl) content. Records of these tests shall be kept on file at each facility for a period of three years and be available for review by the commissioner or his designated representative.
- iii. An 8-ounce sample (minimum) of each load must be collected and labeled with the date, operator and manifest number. Each sample shall be retained for a period of 30 days.
- j. Renewal of Insurance Coverage. Documentation that the required liability insurance coverage for a commercial facility or transfer station has been renewed must be received by March 15 of each year or procedures to initiate permit suspension will be initiated. Any such permit suspension will remain in effect until insurance coverage has been confirmed.
- k. A sign shall be prepared and displayed at the entry of each permitted commercial facility or transfer station. Such sign shall utilize a minimum of 1-inch lettering to state the facility name, address, and phone number and shall be made applicable to the activities of each facility according to the following example:

"This waste (storage, treatment and/or disposal) facility has been approved for (temporary storage, treatment and/or disposal) of nonhazardous oilfield waste only and is regulated by the Office of Conservation. Violations shall be reported to the Office of Conservation at 504/342-5515."

1. A vertical aerial color photograph (or series of photographs) with stereoscopic coverage of each Type A facility must be obtained during the month of October each year and provided to the Office of Conservation by November 30 of each year. Such photograph(s) must be taken at an original photo scale of 1" = 1000' to 1" = 500' depending on the size of the facility. Photo(s) are to be provided as prints in either $8" \times 10"$ or $9" \times 9"$ formats.

6. Manifest System

- a. In order to adequately monitor the movement and disposal of nonhazardous oilfield waste, every shipment of waste transported to a commercial facility shall be accompanied by a manifest entitled "Oil Field Waste Shipping Control Ticket." It is expressly forbidden to transport or accept such waste without a properly completed manifest form.
- b. At the time of transport, the generator shall initiate the manifest by completing and signing Part I. After the transporter completes and signs Part II, the generator shall retain Generator Copy No. 1 (green) for his files. All other copies shall accompany the waste shipment.
- c. Upon delivery of the waste, the commercial facility shall complete and sign Part III of the manifest. The transporter shall then retain the Transporter's Copy (pink) for his files.
- d. Upon completion of the manifest, the commercial facility operator shall retain the Commercial Facility Copy (yellow) for his files, mail Generator Copy No. 2 to the generator, and mail the Conservation Copy (original) to the Office of Conservation no later than the next working day.
- e. The generator, transporter and commercial facility operator shall maintain file copies of completed manifests for a period of not less than three years.
- f. Oil and gas, commercial facility, and transfer station operators who transport NOW out-of-state to a permitted disposal facility or receive NOW from out-of-state must comply with the manifest system requirements of this Subsection.
- g. A monthly report of waste receipts shall be completed by each commercial facility on the appropriate form and submitted to the Office of Conservation within 15 days of the end of each month.

7. Land Treatment Facility Requirements

a. Land treatment facilities shall be isolated from contact with public, private, or livestock water supplies, both surface and underground.

b. The siting, design, construction, operation, testing and closure of land treatment facilities shall be approved only after an application is submitted to and approved by the commissioner pursuant to the requirements of \$129.M.3.

c. General Requirements

- i. The soil shall contain a slowly permeable horizon no less than 12 inches thick containing enough fine grained material within 3 feet of the surface to classify it as CL, OL, MH, CH, or OH under the Unified Soil Classification System.
- ii. The seasonal high water table shall be maintained throughout the facility's operational life at least 36" below the soil surface, either as a result of natural or artificial drainage.
- iii. Throughout the operational life of a land treatment cell, in order to end the treatment phase and reenter the application phase, a cell must be shown to comply with the following criteria:

Parameter	Limitation
pН	6.5-9
EC	10 mmhos/cm
SAR	12
ESP	15 percent
Oil and Grease	5 percent (by weight)
Metals:	
Arsenic	40
Total Barium	100,000
Cadmium	10
Chromium	1,000
Lead	1,000
Mercury	10
Selenium	10
Silver	200
Zinc	500

- iv. The concentration of measured constituents in any groundwater aquifer shall at no time significantly exceed background water quality data.
- v. An unsaturated zone monitoring system shall be installed to provide early warning of possible migration of mobile waste constituents. The unsaturated zone shall be defined in the permit application.
- vi. An independent professional consultant and laboratory shall perform the necessary monitoring to assure adherence to the requirements of this Subparagraph.

vii. Application Phase

- (a). NOW may be applied to active land treatment cells during the application phase only. An application phase begins only under the following conditions:
- (i). a new constructed and approved cell begins receipt of NOW;
- (ii). a cell containing treated NOW has been shown to meet the testing criteria of §129.M.7.c and is utilized for the application of new waste receipts;
- (iii). a cell from which treated oilfield waste has been removed (after meeting the reuse testing criteria of §129.M.8) is utilized for the application of new waste receipts.
- (b). An application phase ends when either of the following occurs:
- (i). three months have elapsed since the date application first began or,
- (ii). 15,000 bbls/acrc of waste has been applied to a cell.
- (c). In order to document the amount of waste applied to each land treatment cell, facilities are required to:
- (i). indicate on each manifest (oilfield waste shipping control ticket) the number of the cell onto which each load of waste is applied;
- (ii). maintain a daily or weekly log of type and volume of wastes applied to each land treatment cell;
- (iii). include in the quarterly report the amount of each type of waste applied to each cell during the quarter.
- viii. Treatment Phase. Upon completion of the application phase, land treatment cells enter the treatment phase. Remedial action (treatment) must be actively performed in order to bring a cell into compliance with this Section. Cells must reach compliance status within 12 months of the end of the application phase.
- ix. Land treatment cell levees must be constructed of soils which are placed and compacted in such a manner as to produce a barrier to horizontal movement of fluids. Levee construction material shall be compacted in a maximum of 8" lifts to > 90 percent standard proctor test. The levees must be properly tied into the barrier along the bottom and sides of the cells. Actual construction of the levees must be monitored and documented by professional engineering or geotechnical soil testing company. All levees must be provided with a means to prevent erosion and other degradation.
- x. Rainwater and other NOW fluids are not to be stored on land treatment cells. Such fluids are to be removed from cells in a timely manner and stored in appropriate facilities.

d. Monitoring Requirements

NOTE: References for the parameters required in this Subparagraph are listed as follows:

EC—electrical conductivity (millimhos/cm for soil, micromhos/cm for water)

SAR-sodium adsorption ratio

ESP—exchangeable sodium percentage (percent)

CEC—cation exchange capacity (milliequivalents/100 gm soil)

TOC—total organic carbon (percent)

Total metals as follows:

As-arsenic

Ba-barium

Cd-cadmium

Cr-chromium

Pb-lead

Hg-mercury

Se-selenium

Ag-silver

Zn-zinc

TDS-total dissolved solids

TSS-total suspended solids

O&G—oil and grease (percent)

Soluble cations:

Na-sodium

Ca-calcium

Mg-magnesium

Soluble anions:

CO₃—carbonate

HCO3-bicarbonate

C1-chloride

SO₄—sulfate

- i. Prior to the receipt of NOW in a newly permitted and constructed land treatment system or cell, baseline data must be provided by the following sampling and testing program:
- (a). Soil in the treatment zone (0-24") of each cell must be sampled and tested for the following parameters: pH, EC, SAR, ESP, CEC, TOC, O&G, As, Ba, Cd, Cr, Pb, Hg, Se, Ag, and Zn.
- (b). Groundwater must be sampled and tested for the following parameters: pH, EC, TDS, TSS, O&G, C1, Na, As, Ba, Cd, Cr, Pb, Hg, Se, Ag, and Zn.
- ii. The following monitoring program must be conducted during the active life of a permitted NOW land treatment system:

- (a). Soil in the treatment zone (waste treatment zone WTZ and upper treatment zone UTZ) must be sampled and tested quarterly to determine waste degradation and accumulation of metals and oil and grease. Samples must be analyzed for the following: As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Zn, TOC, and O&G.
- (b). Soil in the treatment zone (waste treatment zone WTZ and upper treatment zone UTZ) must be sampled and tested quarterly to determine the accumulation of salts and to provide data for determining necessary soil amendments. Samples must be analyzed for the following: pH, EC, SAR, ESP, CEC, soluble cations (Na, Ca, Mg), and soluble anions (CO₃, HCO₃, C1, SO₄).
- (c). Discharge Water. A copy of each discharge monitoring report made in conformance with any applicable state and/or federal regulatory program shall be furnished to the Office of Conservation on a timely basis.
- (d). The unsaturated zone must be sampled as soon as practicable following significant precipitation events (within 90 days) to determine the presence of mobile constituents. If "free drainage" soil solution samplers are utilized, sampling and testing shall be performed on a quarterly basis. A composite of at least three samples per management unit (or cell if applicable) are to be analyzed for the following: TDS, pH, Na, C1, EC, O&G, Ba, Pb, and Zn.
- (e). Groundwater levels in monitor wells shall be measured monthly for a period of two years to determine seasonal fluctuation in water table. Water level shall be measured quarterly each year thereafter.
- (f). Groundwater from monitor wells shall be sampled quarterly to determine the impact of facility operation on groundwater. A composite of at least two samples per well shall be tested for the following: TDS, TSS, pH, C1, Na, EC, O&G, As, Ba, Cr, Pb, and Zn.
- (g). Quarterly monitoring reports must be submitted to the Office of Conservation according to the following schedule: 1st Quarter due March 31st; 2nd Quarter due June 30th; 3rd Quarter due September 30th; 4th Quarter due December 31st. Each quarterly report must contain the following information:
- (i). the status of each cell at the time of the sampling event (application phase, treatment phase, inactive, etc.), the date(s) sampling took place, and a diagram indicating sample locations for each cell;
- (ii). the amounts and types of oilfield waste applied to each cell during the application phase, including the beginning and ending dates of application;
- (iii). a brief description of treatment activities undertaken to bring each cell into compliance with 29-B;
- (iv). a compilation (chart) of test results for the present and past three quarterly sampling events;
 - (v). copies of current laboratory test data;

- (vi). the size of each land treatment cell (in acres).
- (h). The Office of Conservation may approve an alternative monitoring program upon receipt of evidence that such procedure shall provide adequate monitoring during the active life of a facility.

iii. Sampling and Testing Requirements

- (a). A stratified random sampling system shall be used to determine soil sampling locations in land treatment cells. All cells and monitor wells are to be sampled and tested for all parameters unless otherwise approved by the commissioner. Facilities are required to notify the Office of Conservation at least one week in advance of each quarterly sampling event in order for a representative of this office to be present.
- (b). Soil samples in land treatment cells shall be taken in the waste treatment zone (WTZ) and the upper treatment zone (UTZ). Over time, the depth of the treatment zone sampled may need to be increased due to solids buildup on land treatment cells. The degree of waste incorporation shall be noted at the time of sampling.
- (c). At least two samples must be taken from WTZ and UTZ for each acre of cell area. For cells ≤ 6.4 acres in size, all samples from the WTZ and the UTZ are to be composited for one representative analysis for each zone. Cells ≤ 6.5 acres in size must be subdivided for random sample acquisition and compositing.
- (d). Soil samples are to be analyzed using standard soil testing procedures as presented in the Laboratory Manual for the Analysis of Oilfield Waste (Department of Natural Resources, August 9, 1988, or latest revision).
- (e). Water samples are to be analyzed for required parameters according to acceptable EPA guidelines and/or the laboratory procedures as presented in the Laboratory Manual for the Analysis of Oilfield Waste (Department of Natural Resources, August 9, 1988, or latest revision).
- (f). The soil in an inactive cell may not be required to be tested for certain quarterly monitoring parameters only after two consecutive quarterly tests indicate compliance and upon receipt of written approval of this office.

e. Closure and Post-Closure Monitoring

- i. Operators of land treatment systems shall submit closure and post-closure maintenance and monitoring programs to the Office of Conservation for approval. The monitoring program shall address sampling and testing schedules for soil in the treatment zone, water collected from the unsaturated zone monitoring system, surface runoff water, and groundwater.
- ii. Sampling and testing must be performed during the entire closure and post-closure periods. To certify closure of a land treatment system, water collected from the

unsaturated zone monitoring system and groundwater must meet background water quality values; in addition, soils in the treatment zone and surface runoff water must meet the following criteria:

Parameter	Criteria	No. of Consecutive Samples
So	ils in the Treatment Zon	ie
рН	6.5-9	2
O&G	< 3.0 percent	2
EC	≤ 10 mmhos/cm	2
SAR	≤ 12	2
ESP	≤ 15 percent	2
Metals (ppm)		
As	≤ 10	2
Ва	≤ 100,000	2
Cd	≤ 10	2
Cr	≤ 1000	2
Pb	≤ 1000	2
Hg	≤ 10	2
Se	≤ 10	2
Ag	≤ 200	2
Zn	≤ 500	2
	Runoff Water	
рН	6.5-9.0	4
O&G	≤ 15 ppm	4
EC	< 0.75 mmhos/cm	4
SAR	≤ 10	4
TSS	≤ 60 ppm	4
COD	≤ 125 ppm	4
Chloride	500 ppm	4
Metals (ppm)		
As	≤ 0.2	4
Ва	≤ 10	4
Cd	< 0.05	4
Cr	≤ 0.15	4
Hg	≤ 0.01	4
Pb	< 0.10	4
Se	≤ 0.05	4
Zn	≤ 1.0	4

iii. Post-closure monitoring shall be performed on intervals of 6 months, 1, 2 and 5 years following certification that closure is complete.

- 8. Resource Conservation and Recovery of Nonhazardous Oilfield Waste
- a. In order to encourage the conservation and recovery of resources in the oilfield industry, the processing of nonhazardous oilfield waste into reusable materials, in addition to or beyond extraction and separation methods which reclaim raw materials such as crude oil, diesel oil, etc., is recognized as a viable alternative to other methods of disposal.
- b. Commercial facilities may function for the purpose of generating reusable material only, or they may generate reusable material in conjunction with other storage, treatment or disposal operations.
- c. Commercial facilities that produce reusable material are subject to all of the permitting requirements imposed on other commercial facilities. They are also subject to the same operational requirements without regard to the distinction between waste and reusable material. Existing permits may be amended to allow re-use activities at commercial facilities which acquire the capability to engage in processing for re-use. Commercial facilities which utilize extraction or separation methods to reclaim raw materials such as crude oil, diesel oil, etc. may do so without amendment of existing permits.
- d. The onsite generation of reusable material by pit treating companies or other companies which do not hold a legal commercial facility permit is prohibited unless the company desiring to perform such activities complies with the requirements of this Subparagraph and submits the following information to the commissioner for approval:
- i. the names, addresses, and telephone numbers of the principal officers of the company;
- ii. a detailed description of the process by which the company will treat pit fluids and/or solids (NOW), including the types of chemicals and equipment used in the process, diagrams, test data, or other information;
- iii. a description of the geographical area in which the company expects to do business (i.e., statewide, north Louisiana, southwest Louisiana, etc.).
- e. In addition to other applicable requirements, companies seeking to be permitted for the production of reusable materials from nonhazardous oilfield waste shall have the following obligations:
- i. Prior to permit approval or permit amendment approval, applicants must submit the following information:
- (a). a detailed description of the process to be employed for generation of reusable material;
- (b). types of facilities and/or equipment to be constructed (or added);
- (c). identification of the proposed uses for the reusable material; and

- (d), a description of the proposed monitoring plan to be utilized.
- ii. All proposed uses of reusable material must be approved by the commissioner in writing.
- iii. The production of reusable material must be conducted in accordance with a monitoring plan approved by the commissioner with issue of the permit for each facility or process.
- iv. For purposes of regulatory authority only by the Office of Conservation and the establishment of reusable material, compliance with the testing criteria of §129.M.8.f below allows permitted companies to offer the material for the following uses:
- (a). daily cover in sanitary landfills which are properly permitted by state and/or local authorities. The use of reusable material in a sanitary landfill will require written approval of the Department of Environmental Quality; and
- (b). various types of construction material (fill) on a case-by-case basis. The commissioner may approve such use only after submission and review of an application for the intended use. Approval will be dependent upon the composition of the material and the proposed location of use. Reusable material may not be used as fill for construction purposes unless the specific use has been approved in writing by the commissioner of Conservation.

f. Testing Criteria for Reusable Material

	Parameter	Limitation
1.	moisture content	< 50% (by weight) or zero free moisture
2.	pH*	6.5 - 9.0
3.	electrical conductivity (EC)	8 mmhos/cm
4.	sodium adsorption ratio (SAR)	12
5.	exchangeable sodium	15%
6.	total barium: reuse/stockpile at commercial facility reuse at location other than commercial facility	100,000 ppm 40,000 ppm
7.	Leachate testing** for: a. oil and grease b. chlorides	10.0 mg/l 500.0 mg/l

8. Lead	chate testing** for:	
a.	arsenic	0.5 mg/l
b.	barium	10.0 mg/l
c.	cadmium	0.1 mg/l
d.	chromium	0.5 mg/l
e.	lead	0.5 mg/l
f.	mercury	0.02 mg/l
g.	selenium	0.1 mg/l
h.	silver	0.5 mg/l
i.	zinc	5.0 mg/l

- * Non-hazardous oilfield waste when chemically treated (fixated) shall, in addition to the criteria set forth be acceptable as reusable material with a pH range of 6.5 to 12 and an electrical conductivity of up to 50 mmhos/cm, provided such reusable material passes leachate testing requirements for chlorides in Subparagraph f.6 above and Extraction Procedure for Toxicity (EP) tests for metals in Subparagraph f.7 above.
- ** The leachate testing method for oil and grease, chlorides and metals is included in the Laboratory Manual for the Analysis of Oilfield Waste (Department of Natural Resources, August 9, 1988, or latest revision).
- g. The commissioner of Conservation, the secretary of the Department of Natural Resources, and the state of Louisiana upon issuance of a permit to a company facility under this Subsection shall be held harmless from and indemnified for any and all liabilities arising from the operation of such facilities and use of their products, and the company shall execute such agreements as the commissioner requires for this purpose.
- h. Reporting. Each company which generates reusable material must furnish the commissioner a monthly report showing the disposition of all such material.

9. Closure

- a. All offsite commercial facilities and transfer stations under the jurisdiction of the Office of Conservation shall be closed in a manner approved by the commissioner to insure protection of the public, the environment, groundwater aquifers and underground sources of drinking water. A plan for closure must be developed in accordance with the requirements of the commissioner.
- b. Closure bond or letter of credit amounts will be reviewed each year prior to the renewal date according to the following process:
- i. A detailed cost estimate for adequate closure of each permitted commercial facility and transfer station shall be prepared by a independent professional consultant and submitted to the commissioner on or before February 1 of each year.
- ii. The closure plan and cost estimate must include provisions or closure acceptable to the commissioner and must be designed to reflect the costs to the Office of

Conservation to complete the approved closure of the facility.

- iii. Upon review of the cost estimate, the commissioner may increase, decrease or allow the amount of the bond or letter of credit to remain the same.
- iv. Documentation that the required closure bond or letter of credit has been renewed must be received by September 15 of each year or the commissioner shall initiate procedures to take possession of the funds guaranteed by the bond or letter of credit and suspend or revoke the permit under which the facility is operated. In addition, procedures to initiate permit suspension will be initiated. Any such permit suspension will remain in effect until renewal is documented.

N. Liquid Hydrocarbon Storage Wells

- 1. Authorization for the use of salt dome cavities for storage of liquid hydrocarbons is provided in Statewide Order No. 29-M.
- 2. Authorization for all other liquid hydrocarbon storage wells will be granted by the commissioner after notice and hearing, provided there is a finding that the proposed operation will not endanger USDW's.
- O. A filing fee of \$100 shall be attached to each application for a saltwater disposal well or enhanced recovery project.
- P. Annular Disposal. The commissioner may approve annular disposal of saltwater for a period of one year. The applicant shall provide the commissioner a radioactive tracer survey (accompanied by an interpretation of the survey by the company who performed the test) to prove that the injected fluid is entering the correct zone and there are no leaks in the casing. The applicant shall furnish the commissioner an economic study of the well and the economics of alternative methods for disposal of the produced saltwater.
- Q. Exceptions. The commissioner may grant an exception to any provision of this amendment upon proof of good cause. The operator must show proof that such an exception will not endanger USDW's.
- R. This Order shall supersede §129 of Office of Conservation Statewide Order No. 29-B (effective November 1, 1967). Any existing special orders authorizing disposal of saltwater under conditions which do not meet the requirements hereof shall be superseded by this amendment and the operator shall obtain authority for such disposal after complying with the provisions hereof.
- S. All oil and gas and commercial facility operators shall be required to comply with applicable portions of this amendment within 90 days of the effective date, provided that all existing commercial facility operators shall be exempt from all permit application and public hearing requirements under §129.M.4 of this amendment. Failure to comply with this requirement in a timely manner will subject an operator to the suspension or revocation of his permit and/or the imposition of penalties pursuant to R.S. 30:18.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seg.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), promulgated by the Department of Natural Resources, Office of Conservation, LR 6:307 (July 1980), amended LR 8:79 (February 1982), LR 9:337 (May 1983), LR 10:210 (March 1984), LR 12:26 (January 1986), LR 16:855 (October 1990), LR 17:382 (April 1991).

§131. Deficient Wells

In the event a well does not have the capacity to produce its total allowable then it shall produce such amount of oil and gas less than its allowable that it is able to produce, and the deficiency of such well shall not be made up by the overproduction of any other well.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seg.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§133. Monthly Reports

The producing, transporting, storing and/or refining of oil shall be reported in accordance with Order No. 25, or as it may be amended, or superseded. The length of time reports and other pertinent data, as defined by Section 16 of Act 157 of the Regular Legislative Session of 1940, shall be kept on file by operators and companies in their offices, and available for inspection by an agent of the Department of Conservation, shall in no case be less than a period of three years.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§135. Directional Drilling and Well Surveys

- A. Except as otherwise provided in §135, every well drilled in the state of Louisiana shall be drilled in such a manner that at any measured depth the actual or apparent location of the wellbore shall be within a circle whose center is the surface location and whose radius is equal to said measured depth multiplied by the factor 0.087156. The actual or apparent resultant deviation of the wellbore from the vertical shall not be in excess of 5 degrees at any measured depth. In the event a survey indicates that the wellbore is outside the above circle at any measured depth, the wellbore must be straightened and drilling may continue only within the specified limit. A directional survey shall be required and shall be filed with appropriate district manager as confirmation that the wellbore has been straightened and is in fact within the above limit.
- 1. After an operator has commenced drilling a well and desires to change the bottom-hole location by directionally controlling and intentionally deflecting said well from the vertical whether more or less than 5 degrees, unless done to straighten the hole or to sidetrack junk in the hole or because of other mechanical difficulties, he shall first make application for an amended location showing by attached plat the amended projected bottom-hole objective and secure an amended permit to drill before commencing

such operations. The amended bottom-hole location or objective shall comply with all minimum distances from lease or property lines as prescribed by all statewide orders or any other applicable field orders.

- 2. In the event a well is to be drilled at a distance from a property line where such distance is less than the apparent resultant lateral deviation, as determined by multiplying the proposed total depth of the well by the factor 0.087156, a permit to drill for minerals will be issued with the understanding that the operator will be required to furnish the appropriate district manager with inclination and/or directional survey data as proof that the well will be completed in compliance with the provisions of this Statewide Order No. 29-B before an allowable is assigned to said well.
- B. An inclination survey shall be made on all wells drilled in the state of Louisiana with the first shot point at a depth not greater than that of the surface casing seat and succeeding shot points not more than 1000 feet apart. Inclination surveys conforming to these requirements may be made either during the normal course of drilling or after the well has reached total depth. Such survey data shall be certified by the operator's representative and/or drilling contractor and shall indicate the resultant lateral deviation as the sum of the calculated lateral displacement determined between each inclination survey point assuming that all such displacement occurs in the direction of the nearest property line. If a directional survey determining the bottom of the hole is filed with the commissioner of Conservation upon completion of the well, it shall not be necessary to furnish the inclination survey data.

Except as otherwise specified herein, all inclination and/or directional survey data shall be filed along with Form WH (Well History).

- C. A directional survey shall be run and three certified copies thereof filed by or at the direction of the operator with the appropriate district manager of the Department of Conservation on all future wells drilled in the State of Louisiana where:
- 1. the well is directionally controlled and is thereby intentionally deflected from the vertical; or
- 2. the surface location is less than 330 feet from the nearest property line, and the well is drilled below a depth of 3,786 feet; or
- 3. the resultant lateral deviation as calculated from inclination survey data is a distance greater than the distance from the center of the surface location of the wellbore to the nearest property line; or
- 4. the wellbore deviates laterally a resultant distance greater than that determined by a 5-degree angle from a vertical line passing through the center of the surface location of the wellbore.

Property Line, as used herein, shall mean the boundary dividing tracts on which mineral rights, royalty rights or leases are separately owned except that where a unit as

defined in Section 9, Paragraph B, of Revised Statutes of 1950, has been created, the boundaries of the unit shall be considered the *property line*.

- D. The commissioner of Conservation, on his own initiative or at the request of an offset operator, shall have the right to require the operator to run a directional survey on any well if there is reasonable cause therefor. Whenever a survey is so required by the commissioner at the request of an offset operator and the operator of the well and the offset operator are unable to agree as to the terms and conditions for running such survey, the commissioner, upon request of either, shall determine such terms and conditions, after notice to all interested parties and a public hearing.
- E. Unless required by the commissioner of Conservation under §135.D hereof, a directional survey shall not be required for any well which is not directionally controlled and thereby intentionally deflected from the vertical and which has a surface location, maximum angle of deviation, and total depth, all in compliance with the provisions hereof.
- F. The commissioner of Conservation may assess appropriate penalties for failure to comply with any of the provisions hereof.
- G. The provisions hereof shall not alter or affect the minimum spacing provisions of Statewide Orders 29-E and 29-H or any other applicable orders.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (March 1967).

§137. Plugging and Abandonment

A. Schedule of Abandonment

1. Dry Holes. All wells drilled for oil or gas and found to be dry prior to or after the effective date of this order shall be plugged within 90 days after operations have been completed thereon or 90 days after the effective date of this order, whichever is later, unless an extension of time is granted by the commissioner of Conservation.

2. Other Wells on or After Effective Date of Order

a. All wells wherein production operations or use as a service well have ceased on or after the effective date of this order shall continue to be reported on the Form DM-1-R or Form DT-1 with the appropriate notation that the well is off production or no longer in use as a service well along with the date of last production or date the service well ceased to be used; and, after six months, if such a well has not been restored to production or use as a service well, it shall thereafter be reported by the operator on the semiannual Inactive Well Report, Form INACT WR-1 (1974) which report shall be filed with the Department of Conservation showing the status of such well as of April 1 and October 1 of each year (report to be filed no later than April 25 and October 25). Such wells shall continue to be reported on the Form DM1-R or Form DT-1 showing the date of last production or the date the well ceased to be used as a service well, together with a notation showing the well

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is carried on the Form INACT WR-1 (1974), Inactive Well Report, until the well is plugged and abandoned.

- b. The Inactive Well Report shall list the field, well name, well number and other pertinent data and provide an appropriate column to classify such well as having either (1) future utility, or (2) no future utility. If the well is classified as having future utility, operator shall specify such utility by completing the appropriate column on the form. Wells so classified shall be reviewed periodically by the district manager who, at his discretion, may require an operator to supply additional information to justify the classification.
- c. All such wells classified on the Inactive Well Report by either the operator or the district manager as having no future utility shall be plugged within 90 days from

the date of such classification unless any such well is included in a Schedule of Abandonment approved or promulgated by the commissioner of Conservation or an extension of time is otherwise granted by the commissioner of Conservation. The date any Schedule of Abandonment is approved or promulgated or an extension of time expires shall be shown in the appropriate column on the form.

3. Other Wells Prior to Effective Date of Order

- a. All wells wherein production operations or use as a service well have ceased prior to the effective date of this order shall continue to be reported on the Form DM-1-R or Form DT-1 with the appropriate notation that the well is off production or no longer in use as a service well along with the date of last production or date the service well ceased to be used; and, after six months from the effective date of this order is such a well has not been restored to production or use as a service well it shall thereafter be reported, classified and subject to review in the same manner provided for in the preceding Subparagraph b except as hereinafter otherwise provided.
- b. A well classified on the Inactive Well Report by either the operator or the district manager as having no future utility shall not be required to be plugged within a specified period of time but will be plugged in accordance with a Schedule of Abandonment submitted by the operator and approved or otherwise promulgated by the commissioner of Conservation.
- 4. Schedule of Abandonment. A Schedule of Abandonment submitted in accordance with Paragraph 2.b or 3.b above shall include a schedule or program for the orderly plugging of wells which should be consistent with prudent operating practices and take into account any economic considerations and other circumstances which would affect such a program of plugging wells. Any Schedule of Abandonment approved or promulgated by the commissioner of Conservation shall be followed unless modified by the operator with approval of the commissioner. Reference to the approved Schedule of Abandonment shall be made on the Inactive Well Report for each well which is included in such a program and has not yet been plugged.
- 5. Administrative Interpretation. For purposes of administering the heretofore mentioned paragraphs, it is understood that:
- a. a wellbore which is completed in more than one common source of supply (multiple completions) shall not be considered as ceasing to produce and shall not be reported on the Inactive Well Report as long as there is production from or operations in any completion in the wellbore.
- b. wells classified as having future utility may be off production or shut-in but are considered to have future utility for producing oil or gas for use as a service well.
- c. no completion with a transferred allowable credit will be carried on the Inactive Well Report.

- B. The responsibility of plugging any well over which the commissioner of Conservation has jurisdiction shall be the owner(s) of record.
- C. In the event any owner(s) responsible for plugging any well fails to do so, and after a diligent effort has been made by the department to have said well plugged, then the commissioner may call a public hearing to show cause why said well was not plugged.
- D. The commissioner or his agent may require the posting of a reasonable bond with good and sufficient surety in order to secure the performance of the work of proper abandonment.
- E. The district manager shall be notified immediately by the new operator whenever a change of operator occurs. This must be accomplished by submitting Department of Conservation Form MD-10-RA (Application for Amended Permit to Drill for Minerals) to reflect the new operator.

F. Plugging Procedures

- 1. Notification of intention to plug any well or wells over which the commissioner of Conservation has jurisdiction, shall be given to the appropriate district manager prior to the plugging thereof. Notification shall be made in writing to the district office in the form of a WORK PERMIT (Form DM-4 Rev.) for which an original and three copies are required. Where plugging involves a well with a rig on location, the district manager may grant verbal approval to plug and abandon the well provided the work permit is subsequently submitted. Any operator who fails to comply with this requirement may be required by the district manager to place additional cement plug(s) and/or prove the plug(s) are placed as the operator states they are.
- 2. Once an operator has been issued a work permit to plug and abandon a well by the appropriate district manager, then said operator shall be required to contact the appropriate oil and gas inspector a minimum of 12 hours prior to beginning the plugging operations. During drilling and/or workover operations, the requirement to contact the appropriate oil and gas inspector a minimum of 12 hours prior to beginning the plugging operations shall be waived at the time verbal notification is made to the district office.
- 3. In plugging wells, it is essential that all oil or gas bearing formations be protected.
- a. Sufficient cement shall be used to adequately isolate each perforated pool, one from the other. A cement plug of at least 100 feet shall be placed immediately above or across the uppermost perforated interval of the pool. If he deems it advisable, the district manager may allow a bridge plug with a minimum of 10 feet of cement on top to be placed immediately above each producing pool.
- b. In wells completed with screen or perforated liners, if it is impractical for the operator to remove the screen or perforated liner, he shall place a cement plug of at least 100 feet with the bottom as near as practical to the top of the screen or liner. If the district manager deems it advisable, a bridge plug with a minimum of 10 feet of

- cement on top and placed as near as practical to the top of the screen or liner may be used in lieu of the cement plug.
- c. When production casing is not run or is removed from the well, a cement plug of at least 100 feet shall be placed from at least 50 feet below the shoe of the surface casing to at least 50 feet above. In lieu of the above, the operator shall have the option of using a cement retainer placed at least 50 feet above the surface casing shoe and a sufficient amount of cement shall be squeezed below the retainer to form a cement plug from the base of the retainer to 50 feet below the base of the surface casing. A 10-foot cement plug shall be placed on top of the retainer.
- d. If fresh-water horizons are exposed when production casing is removed from the well, or as a result of production casing not being run, a cement plug shall be placed from at least 100 feet below the base of the deepest fresh-water sand to at least 150 feet above the base of the sand. A cement plug of at least 100 feet shall also be placed from at least 50 feet below the shoe of the surface casing to at least 50 feet above it. In lieu of the above, the operator shall have the option of using a cement retainer placed at least 50 feet above the surface casing shoe and a sufficient amount of cement shall be squeezed below the retainer to form a cement plug from the base of the retainer to 50 feet below the base of the surface casing. A 10-foot cement plug shall be placed on top of the retainer.
- e. The setting and location of the first plug below the top 30-foot plug shall be verified by tagging. In the event a retainer is used, tagging will not be necessary
- f. Additional cement plugs shall be placed to adequately contain any high pressure oil, gas or water sands or as may be required by the district manager.
- g. A 30-foot cement plug minimum shall be placed in the top of the well.
- h. Mud laden fluid of not less than 9 pounds per gallon shall be placed in all portions of the well not filled with cement, unless otherwise approved by the district manager.
- i. All cement plugs shall be placed by the circulation or pump down method unless otherwise authorized by the district manager. The hole must be in a static condition at the time the plugs are placed.
- j. After placing the top plug, the operator shall be required on all land locations to cut the casing a minimum of 2 feet below plow depth. On all water locations, the casing shall be cut a minimum of 10 feet below the mud line. If an operator contemplates reentering the well at some future date for saltwater disposal or other purpose, the district manager may approve after receiving written request from an operator not to cut off the casing below plow depth or mud line.
- k. The plan of abandonment may be altered if new or unforeseen conditions arise during the well work but only after approval by the district manager.

- 4. Upon plugging any well for any cause, a complete record thereof shall be made out, duly verified and filed in triplicate on Form P&A in the district office within 20 days after the plugging of such well. A cementing report shall be filed with the plugging report.
- G. Well to be Used for Fresh Water. When the well to be plugged may be safely used as a fresh-water well and the owner or owners of the well have, by a mutual written agreement with the landowner, agreed to turn the well over to the landowner for that purpose, then the well need not be filled above the plug set below the fresh-water formation; provided, however, that the signed agreement or (if recorded in the public records) a certified copy thereof be filed with the appropriate district manager, which shall relieve the owner or owners who turn the well over to the landowner from responsibility above the plug. The plugging report shall indicate that the well has been or will be converted to a fresh water well.
- H. Temporary Abandonment of Drilling Wells. Any drilling well which is to be temporarily abandoned and the rig moved away, shall be mudded and cemented as it would be for permanent abandonment, except a cement plug at the surface may be omitted.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seg.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943), amended (March 1974).

§139. Exceptions and Hearings

If any operator can show to the commissioner that the drilling and producing methods herein prescribed or the particular method by him prescribed for securing tests of wells, or any other part of this Order, as applies to his well or wells, result in waste or as to such operator are unreasonable, the commissioner may enter such an order, as a special exception to the aforesaid rules and regulations, as will prevent such waste or eliminate such unreasonable restraint, as may result from the application of the aforesaid rules and regulations to the well or wells of such operators; provided, however, that before any operator shall be allowed the benefit of an order granting an exception as authorized by this Section, such operator must establish that such exception, if granted, will not result in waste in the field as a whole or give him an inequitable and unfair advantage over another operator or other operators in the field. No special exception will be granted except upon written application, fully stating the alleged facts, which shall be the subject of a hearing to be held not earlier than 10 days after filing of the application. Prior to the hearing upon such application, at least 10 days notice thereof shall be given by publication to all operators in the field. In addition to said notice by publication, adjacent operators where appropriate may be given at least 10 days notice of said hearing by personal service, or by registered mail.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§141. Application of Special Field Orders

This Order shall be cumulative of, and in addition to, all special orders, rules and regulations affecting the drilling and production of oil and gas, as heretofore promulgated. In case of any conflict between this Order and the special orders on specific fields, said special orders on specific fields shall govern.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et sea.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§143. Penalty for Infractions

In accordance with the laws of the state of Louisiana, and especially Act 157 of the Legislature of 1940, any infraction of these rules and regulations may result in shutting in and sealing of any drilling or producing well or wells, tank storage or lease or leases, involved in the infraction, and prohibition of acceptance of oil or gas from such well or lease for purchasing or transporting by agent or, in the alternative, as an additional penalty, be prosecuted under Section 17 of Act 157 of 1940.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et seq.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

§145. Effective Date

This Order shall be effective from and after the first day of August, 1943.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:4 et sca.

HISTORICAL NOTE: Adopted by the Department of Conservation (August 1943).

LOUISIANA ABANDONED OIL FACILITY DATABASE GROUND-TRUTH SURVEY SUMMARY REPORT

FOR

TRANS-GULF PETROLEUM CORP - VARNER FPN: E03612 JOP ID: 16-E-1003

FIRST QUARTER 2003 OPA SITE ASSESSMENTS IN LOUISIANA Caddo, DeSoto, Sabine, Red River and Webster Parishes, Louisiana

November 10, 2003

Prepared for: United States Army Corps of Engineers Tulsa District

USACE Contract: DACW56-02-G1-001 USACE Task Order No.: 0003 E & E Project No.:001702.CU03.3612

> Prepared by: Ecology & Environment, Inc. Baton Rouge, Louisiana



Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

FACILITY SUMMARY

Facility Name: Trans - Gulf Petroleum Corp. - Varner FPN: E03612

JOP ID: 16-E-1003 Parish: DESOTO Additional Agency ID:

Facility Description:

The Trans-Gulf Petroleum Corporation - Varner abandoned oil production facility is located on a 394-acre lease in the Red River - Bull Bayou Oil and Gas Field, 1.3 miles west of Evelyn, in Desoto Parish, Louisiana. Approximately five residences are located within a one-mile radius of the facility. The facility is accessed from the northeast via Ranch Road, which is off of Louisiana Highway (LA Hwy) 510. An unlocked ranch gate is the only restriction to access.

The facility consists of one secondary containment basin, two aboveground storage tanks (AST), two pits, and three oil production wells. Two 210-barrel (bbl) welded steel AST, identified as AST1 and AST2, were situated within a 69-foot by 24-foot rectangular, breeched, earthen secondary containment basin identified as CONT1. The facility serviced three production wells: the Varner Well No. 001 (SN 152795); the Varner Well No. 002 (SN 152863); and Varner Well No. 003 (SN 194686). Louisiana Department of Natural Resources (LDNR) records indicate all of the wells are orphaned. PIT1 was a 30-foot diameter reserve production pit, believed to be LDNR Pit ID 16P419, located 30 feet west of SN 152863. PIT2 was a 40-foot by 10-foot reserve production pit, believed to be LDNR Pit ID 16P418, located 20 feet west southwest of SN 152863. Both of the LDNR pits had an open-orphan discovery status.

AST1, AST2, CONT1, and SN 152759 are located on a 246-acre tract situated in Sections 026 and 035, Township 12 North, Range 11 West (Sec 026, and 035, T12N, R11W), east of Dolet Bayou. A signed access agreement was obtained from the landowner. PIT1, PIT2, SN 152863 and SN 194686 are located on a 296-acre tract situated in Sec 026, 34 and 035, T12N, R11W, west of Dolet Bayou. The property owner of the west tract granted verbal access but declined to sign a written access agreement. Samples were not collected for laboratory analysis from that portion of the facility. Since it was jointly decided that EPA would address AST1, AST2 and CONT1 and LDNR would address the wells and pits in an upcoming area State Oilfield Site Restoration package, written access for the western tract was not pursued after initial refusal.

Based on gauging, soil core observations, and sample analysis, the following volumes of non-hazardous oilfield waste (NOW) are estimated to be present at the facility. CONT1 contained six cubic yards (yd3) of oil-impacted soils that had an oil and grease (O & G) concentration above the limit of 1% established by the Louisiana Administrative Code, Title 43, Part XIX Section 313 (LAC43.XIX.313). AST1 and AST2 contained 121 bbl of oil and oily sludge that can not be considered as NOW due to the uncertainty of the origin of the contents as resultant to exploration and production (E&P) operations. The Louisiana Department of Environmental Quality (LDEQ) Hazardous Waste Division investigated the operator of this facility for his actions at a separate, nearby facility, specifically JOP 16-E-1002/FPN N01126, and determined, based on sample analysis of the contents of containers at that facility, that they contained non-specific waste oil illegally stored by the operator. LDNR and the property owner stated that during the same time period the operator had placed an oil/oily substance that had not originated from this lease into AST1 and AST2 of this facility. Therefore, it is believed that AST1 and AST2 contained waste oil that would be regulated under 40 CFR Part 279. Such material may not be disposed of as NOW and should be considered for oil recycling or fuels blending. The analysis of their contents indicated that fuel blending is a viable disposal option.

Facility Components:

AST 1, AST 2, CONT1, PIT 1, PIT 2

Number of Associated Wells: 3

LOSCO IDs:

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

Assessment Status:	Abandoned Pr	iority: Substantial T	nreat Score:	57.1 Date: 2	2/18/2003
Current Status:	Abandoned Pr	iority: Substantial T	nreat Score:	57.1 Date:	9/4/2003
Status Comment:	The wells associated v September of 1999.	vith this facility were	ast operated in June of	1998 and were orp	haned in
Jurisdictional Zone:	EPA	Oil and Gas Field I	D: 7651 Field Name	e: RED RIVER-BU	LL BAYOU
Facility Coordinates	:				
Latitude (DMS)	31 ° 59 ' 29	" North, Longitu	de (DMS) 93 °	27 ' 57 "	West
	I	atitude/Longitude Me	asured by:		
O Map Scale	• GPS Model:	Differen	tial: DOP Value:	1.5 Datum	n: WGS 84
7.5 Minute Quadran	gle: EVELYN	LADOTD	No.: 078A USG	GS No.: 31093H4	
Section: 26 Town	ship: 12 N Range:	11 W Specific Se	ection Location:	of	
Nearest Landmarks	:				
City: Evely	yn		Direction: E	Distance 1.3	Units: mi.
Waterway: Dole	t Bayou		Direction: SW	Distance 100	Units: ft.
Surface Water Intal	ke: NO INTAKE AVAII	LABLE	Direction:	Distance	Units:
Directions to Site:					
US Hwy 84 for appro	eximately 0.3 mile to LA ght onto Ranch Road and	Hwy 510. Turn right	US Hwy) 84 in DeSoto onto LA Hwy 510 and 6 5 mile on Ranch Road. 0	travel southeast for	8.1 miles to
✓ Accessible by L	and Acc	essible by Water			
	ne facility flows 100 fee		ayou. Dolet Bayou flo		s River and
Bayou Pierre to the F	Red River, which is "na	vigable" in fact and su	bject to interstate comn		
Is it over water or s	heen on water? (O Yes O No	Distance to Site (fee	et): 100	
Landowner:					
Operator Code:	Business N	ame:			
First Name: Antho	ony Last Nam	e: Valure	Middle Initial:		
Title:					
Street: 261 Valure	Lane	City: Mansfield	State: LA	Zip: 71052-0000	
Phone: (318) 872-22	236 E-mail:	F	ax: (318) 871-8701		

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

Operator Code:	Business Nam	e:		
First Name: Donald	Last Name:	Powell	Middle Initial: W.	
Title:				
Street: 4630 Highway 510		City: Mansfield	State: LA Zip: 7	1052-0000
Phone: (318) 932-8893	E-mail:	Fax:		
Mineral Rights Holder:				
Operator Code: 6040	Business Nam	e: TRANS-GULF PET	ROLEUM CORP	
First Name: William	Last Name:	Sneed	Middle Initial: J.	
Title President				
Street: P.O. Box 5355		City: Bossie	r City State: LA	Zip: 71171-
Phone:	E-mail:	Fax:		
Current Operator:				
Operator Code: 6040	Business Nam	e: TRANS-GULF PETI	ROLEUM CORP	
First Name: William	Last Name:	Sneed	Middle Initial: J.	
Title: President				
Street: P.O. Box 5355		City: Bossier City	State: LA Zip: 7	1171-
Phone:	E-mail:	Fax:	_	
Approximate size of facilit		394		
Are security reatures pres	ent? Yes	O No		
Type and condition of secu	rity features:			
There were no security feat ranch gate on Ranch Road of				
Are there visual signs of h	uman or wildlife a	ccess to site?	• Yes O No	
Description of signs and ac	tivity by humans o	r wildlife:		
CONT1 was adjacent to a ranimal burrows were observ			sh was present inside of the	basin and
Endangered and Threaten	ed species potential	ly located within parish	1:	
Common Name	Status	Scientific Name	Taxonomic Group	Range
Bald Eagle	Threatene	ed Haliaeetus leucoce	phalus Bird	Entire State

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

Description of surrounding properties:

N : Residences and pasture

S : Woods, fields, and Dolet Bayou

E: Fields and Ranch Road

W : Woods

:

Number of residences/business located within a 1-mile radius of the facility:

5

Additional Comments:

Mr. Powell, property owner for the portion of the facility containing the tank battery and SN 152795 and a former pumper for the operator indicated that the operator had placed oil or oily substance not originating from this lease into the tanks.

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

FACILITY ACTIONS

JOP ID: 16-E-1003 **Event:** State Site Inspection

Date: 1/24/2001 **Time:** 09:33

Agency/Contractor: Representative(s):

LDNR R.A. Bufkin

Description:

Orphaned Oilfield Site Inspections of the wells associated with the facility were performed by LDNR on January 24 and 25, 2001.

Comments:

During the LDNR Orphaned Oilfield Site Inspections it was noted that SN 152795, SN 152863 and SN 194686 had no wellhead. It was noted that there was a "Casing Swab Rig" still connected to SN 152795 and two 210-bbl stock tanks were associated with that well. According to LDNR, the contents of the stock tanks are not production from these wells and should be analyzed before removing from the lease. LDNR Pit 16P418 and 16P419, believed to be PIT1 and PIT2 respectively, were identified and associated with SN 152863.

JOP ID: 16-E-1003 **Event:** Federal Agency Activation

Date: 2/11/2003 **Time:** 13:46

Agency/Contractor: Representative(s):

LDNR

Description:

LDNR identified the Trans-Gulf Petroleum Corp. - Varner facility for Joint Operating Partnership (JOP) Review.

Comments:

USEPA opened Federal Project Number (FPN) E03612 and issued Pollution Removal Funding Authorization (PRFA) to the USACE to investigate whether the facility warranted an Oil Spill Liability Trust Fund (OSLTF) supported cleanup.

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

JOP ID:	16-E-1003	Event:	Phase I Ground Truth Survey
Date:	2/18/2003	Time:	13:55
Agency/Contr	ractor:	Represe	entative(s):
E & E, Inc.		Paul James, Patrick Johnson, and Justin Farrell	
LDNR		R. A. "Buddy" Bufkin	

Description:

USACE contractors conducted an initial baseline assessment of the facility. Tasks scheduled to be completed during the assessment included: documenting the location and condition of the well and facility components; conducting a naturally occurring radioactive material (NORM) screening of all production related equipment; and taking photographic documentation of the facility.

Comments:

Facility access was coordinated with LDNR Conservation Enforcement Specialist (CES) R. A. "Buddy" Bufkin, who accompanied the USACE contractors during the assessment. Donny Powell, the landowner of the facility's eastern tract, stated that the last operator of the facility had dumped an oily substance in AST1 and AST2 that did not originate from the wells. An LDEQ investigation at a nearby facility determined that this operator had dumped non-specific waste oil at that facility, and it was believed that the material dumped in AST1 and AST2 was from the same origin.

AST1 and AST2 were gauged and documented. The surface conditions of PIT1, PIT2 and CONT1 were documented, but they were not fully delineated. CONT1 was heavily overgrown, trash and debris were noted in the west portion of the basin, and animal burrows had breached its berms. SN 152795, SN 152863 and SN 194686 were also located and documented. A truck mounted swab rig was attached to SN 152795 and an empty drum was observed west of the well. The facility components were screened for NORM and no radiation readings significantly above the background level of 5 micro Roentgens per hour (uR/hr) were observed. No samples were taken from this facility pending written receipt of access from the property owners.

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

JOP ID:	16-E-1003	Event: Phase II Ground Truth Survey
Date:	5/3/2003	Time:
Agency/Cont	ractor:	Representative(s):

Description:

USACE contractor, E&E, completed the baseline investigation of the facility. The specific tasks to be conducted during this assessment included: locate and obtain written and photographic documentation of any additional facility components; conduct a NORM screening of those components; and delineate, and as required, sample pits, containment basins, and other potentially oil-impacted areas.

Comments:

A signed access agreement to the facility property east of Dolet Bayou was received from the landowner prior to mobilization. The owner of the facility property west of Dolet Bayou granted verbal access but declined to sign a written access agreement. Since it was jointly decided that EPA would address AST1, AST2 and CONT1 and LDNR would address the wells and pits in an upcoming area State Oilfield Site Restoration package, written access for the western tract was not pursued after initial refusal and samples were not collected for laboratory analysis from that portion of the facility west of Dolet Bayou.

CONT1 was inspected, cored and logged at three locations to a maximum depth of two feet below ground surface (BGS). The cores consisted of 1 to 3-inch thick layer of leaf debris, soil and sandy clay, overlaying brown sandy clay. Composite soil sample 16E1003-C1-A was created from the upper soil and sediment layers of the cores. Composite soil sample 16E1003-C1-B was created from the underlying sandy clay layer of the cores.

Composite sludge sample 16E1003-T1-A was created from representative columns of the contents of AST 1 and AST 2.

Samples were submitted to the E&E contract laboratory for analysis. Soil samples were analyzed for parameters described in energy and production facility regulations found in Louisiana Administrative Code, Title 43, Part XIX, Section 313 (LAC43.XIX.313).

One composite sludge sample was collected from the tanks and analyzed for LAC43.XIX.313 parameters, Resource Conservation and Recovery Act (RCRA) characteristics, total organic halides (TOX), Basic Sediment and Water (BS&W), and heat of combustion to assist in disposal characterization. Sample 16E1003-T1-A contained 50 percent (%) BS&W and had a TOX concentration of 6.3 milligram per kilogram (mg/kg) and a heat of combustion of 57 gross British thermal unit per pound (BTU/lb). Sample results for LAC43.XIX.313 parameters and RCRA characteristics are presented in the Analytical Results Table of this report.

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

JOP ID:	16-E-1003	Event:	Data Quality Assurance Review
Date:	7/11/2003	Time:	12:48
A/C		D.	
Agency/Cont	ractor:	Keprese	ntative(s):

Description:

USACE Contractor E&E has completed a quality assurance (QA) review for Work Orders 03050225 and 03050243 for the Trans-Gulf Petroleum Corp. - Varner and other site assessments. Samples were analyzed for the parameters listed in Louisiana Statewide LAC.43.XIX.313: LDNR 29B. Nineteen (19) soil samples were analyzed for oil and grease (O & G), pH, metals (arsenic, chromium, zinc, lead, cadmium, silver and selenium), mercury, total barium, electrical conductivity (EC), cation exchange capacity (CEC), sodium absorption ratio (SAR), exchangeable sodium percentage (ESP) and % moisture. Four of the 19 samples were associated with this facility and have sample numbers and laboratory identifiers as follows: 16-E-1003-C1-B, 03050225-14; 16-E-1003-T1-A, 03050225-15; 16-E-1003-T1-A, 03050225-18.

The data packages were validated to determine if the quality control (QC) specifications identified in the scope of work document "1st Quarter 2003 OPA Sites" were achieved. Acceptance criteria included review of: laboratory QA/QC measurements and associated blinded duplicate samples; laboratory blanks; acceptable percent recovery for laboratory control samples (LCSs), matrix spikes and matrix-spike duplicates (MS/MSD); calibration and continuing calibration check for all target analytes; and minimal requirements of cited methodology relating to sample batching, and management of samples. This review will be limited to an assurance check on frequency and acceptable performance, and will not include an in-depth review of calculations. A summary of the criteria used is included in the Analytical Laboratory Results attachment to the Ground-Truth Survey Summary Report.

Comments:

The specific analyses conducted on each sample are documented on the chain of custody (COC). Southern Petroleum Laboratories (SPL) provided the specific criteria for QC limits in the data packages. The data were reviewed in accordance with the procedures outlined in Laboratory Procedures for Analysis of Exploration and Production Waste and the United States Environmental Protection Agency's (EPA's) Test Methods for Evaluating Solid Waste (SW-846; EPA 1997). Additional guidelines for data review are adapted from the EPA's Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review (EPA 1994), where appropriate. The analytical data provided by SPL were reviewed for precision, accuracy, and completeness. All data were deemed acceptable as reported, with the qualifications listed below. Data were qualified according to the applicable guidance if the results were outside the limits specified by the laboratory. A more detailed discussion of the procedures and results is presented in the Analytical Laboratory Results attachment to the Ground-Truth Survey Summary Report. It was noted that the oily nature of composite sample 16E1003-T1-A required serial dilutions of the sample during analysis, which in turn increased the detection limits for several RCRA toxicity analytes to exceed the regulatory limit thus causing non-detection results for the analytes to be inconclusive.

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

JOP ID:	16-E-1003	Event: Conveyance Research
Date:	10/30/2003	Time:
Agency/Contr	actor:	Representative(s):
E & E, Inc.		Justin Farrell

Description:

USACE contractor, E&E, reviewed conveyance documents obtained from the DeSoto Parish Clerk's Office by property researcher Paul Bergeron for a 394-acre tract, more or less, in Sections 026, 034 and 035, Township 12 North, Range 11 West (Sec 026, 034, and 035, T12N, R11W) of DeSoto Parish, Louisiana.

Comments:

The Caddo Parish Tax Assessor identified Donald Wayne & Nancy Myers Powell as the owner of 246-acre tract located in Sec 026 and 035, T12N, R11W east of Dolet Bayou upon which AST1, AST2, CONT1, and SN 152759 are located and Anthony Valure, et al, as the owner of 296-acre tract in Sec 26, 034 and 035, T12N, R11W upon which PIT1, PIT2, SN 152863 and SN 194686 are located. A signed access agreement was received from Donald Powell. Only verbal access was received from Anthony Valure.

04/26/1976: 387078: Minerals

OGMR Lease: Robert G. Varner leased the OGMR for a 364-acre tract in Sec 026, 034 and 035, T12N, R11W of DeSoto Parish, Louisiana, to David E. Burk, Sr.

08/05/1976; 388561; Minerals

Partial Assignment of OGMR Lease: Monte Carlo Exploration, Inc. assigned a 65% working interest in the OGMR leases of a 394-acre tract in Sec 026, 34 and 035, T12N, R11W of DeSoto Parish, Louisiana, to VanderGraham Exploration, Inc.

08/05/1976; 388562; Minerals

Partial Assignment of OGMR Lease: Vander/Graham Exploration, Inc. assigned a 33-1/3% interest of the OGMR Lease for the 40 acres surrounding Varner No. 1 well and the 40 acres surrounding Varner No. 2 wells to Arthur Sherman.

08/30/1976; 390397; Minerals

Operating Agreement: Monte Carlo Exploration, Inc., entered into an operating agreement with Vander/Graham Exploration, Inc., for Varner No. 1 and No. 2 wells and their associated OGMR leases of a 394-acre tract in Sec 026, 34 and 035, T12N, R11W of DeSoto Parish, Louisiana,

12/27/1976; 391382; Minerals

OGMR Lease Partial Assignment: Robert G. Varner assigned a quarter of the OGMR of a 363.96-acre tract in Sec 026, 034 and 035, T12N, R11W of DeSoto Parish, Louisiana, to Joe David Varner.

01/14/1977; 392185; Minerals

Acknowledgement of OGMR Lease: Robert G. Varner acknowledged that Trans-Gulf Petroleum held half of the mineral interest of the OGMR of a 363.96-acre tract in Sec 026, 034 and 035, T12N, R11W of DeSoto Parish, Louisiana, via their acquisition in April 19, 1948, as documented in COB 175, Pg. 604.

03/30/1977; 393482; Minerals

OGMR Lease Assignment: Monte Carlo Exploration, Inc. assigned the OGMR executed in Instrument 387078 to Rebel Exploration, Inc and Eastern Oil Company.

05/17/1977; 394762; Minerals

Affidavit of Claim of Privilege: Vander/Graham Exploration, Inc., represented by President T. David Vanderlaan, filed

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

a lien against the Varner No. 1 and No. 2 wells located on the OGMR leases executed under Instrument 387078 and Instrument 387028 owned by Monte Carlo Exploration, Inc., for materials, labor and services performed in connection with the drilling and operation of the wells.

07/13/1977: 396186: Surface

Cash Sale: Robert G. Varner and Jamie Ruth Dean Varner sold 363.96 acres, more or less, in Sec 026, 034 and 035, T12N, R11W of DeSoto Parish, Louisiana, to William T. Dugan and Martha Outlaw Dugan, subject to all previous OGMR leases and reserving their interest in the OGMR.

10/17/1977; 399927; Minerals

Amending and Supplemental Affidavit of Claim of Privilege: Vander/Graham Exploration, Inc., represented by President T. David Vanderlaan, reaffirmed and reasserted its lien against the undivided 35% interest in the Varner No. 1 and No. 2 wells and the 364-acre portion of the OGMR leases executed under Instrument 387078 and Instrument 387028 owned by Monte Carlo Exploration, Inc.

11/21/1977; 399944; Minerals

Writ of Sequestration: Pursuant to Suit No. 36124 of the 11th Judicial District Court (Vander/Graham Exploration, Inc., vs. Monte Carlo Exploration, Inc. et al) the Sherrif of DeSoto Parish, Louisiana, seized Monte Carlo Exploration, Inc. and Rebel Exploration, Inc.'s 35% interest in the Varner No. 1 and No. 2 wells and the 364-acre portion of the OGMR leases executed under Instrument 387078 and Instrument 387028.

06/05/1979: 415619: Minerals

Amending and Supplemental Affidavit of Claim of Privilege: Vander/Graham Exploration, Inc., represented by President T. David Vanderlaan, amended its lien against the undivided 35% interest in a 364-acre portion of the OGMR leases executed under Instrument 387078 and Instrument 387028 owned by Rebel Exploration, Inc. to include additional costs performed in connection with the drilling and operation of the Varner No. 1 and No. 2 wells, as well as document preparation and attorney fees.

06/05/1977; 415640; Minerals

Judgment: Vander/Graham Exploration, Inc., vs. Monte Carlo Exploration, Inc. et al; this judgment (No. 36124) of the 11th Judicial District Court decreed that Vander/Graham Exploration, Inc. was awarded a 35% interest in a 364-acre portion of the OGMR leases executed under Instrument 387078 and Instrument 387028 and the Varner No. 1 and No. 2 wells, and other considerations, from Monte Carlo Exploration, Inc., and Rebel Exploration, Inc.

05/01/1981; Instrument unknown (COB 474/688); Minerals

OGMR Lease Assignment: Vander/Graham Exploration, Inc., represented by President T. David VanderLaan, assigned all of its working interest and part of its revenue interest in the OGMR leases of a 394-acre tract in Sec 026, 34 and 035, T12N, R11W of DeSoto Parish, Louisiana, to Miss-La-Tex, Inc. represented by Mikell F. VanderLaan.

07/14/1982; 447570; Minerals

OGMR Lease Assignment: Miss-La-Tex, Inc. represented by Mikell F. VanderLaan, assigned a working interest in the OGMR lease executed under Instrument 387078 to Arthur Sherman.

05/22/1984: 468110: Minerals

OGMR Lease: Robert G. Varner, Ruth Dean Varner, Joseph David Varner, and Trans-Gulf Petroleum, represented by Hugh M. Sneed, leased the OGMR for the 40 acres in a square around the Varner No. 1 and Varner No. 2 wells in Sec 026, and 034, T12N, R11W of DeSoto Parish, Louisiana, to Trans-Gulf Petroleum Corporation and Joe Varner Oil, Inc.

06/22/1984: 474396: Minerals

OGMR Lease: Robert G. Varner, Ruth Dean Varner, Joseph David Varner, and Trans-Gulf Petroleum, represented by Hugh M. Sneed, leased the OGMR for a 52.89-acre tract in Sec 034 and a 58.77-acre tract in Sec 026, both in T12N, R11W of DeSoto Parish, Louisiana, to Joe Varner Oil, Inc. and Ajax Gas Corporation.

05/05/1985; 484350; Minerals

OGMR Lease: Robert G. Varner, Ruth Dean Varner, Joseph David Varner, and Trans-Gulf Petroleum, represented by

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William J. Sneed, leased the OGMR for a 91.13-acre tract in Sec 034 and 035, T12N, R11W of DeSoto Parish, Louisiana to Ajax Gas Corporation.

05/05/1985; 484351; Minerals

OGMR Lease: Robert G. Varner, Ruth Dean Varner, Joseph David Varner, and Trans-Gulf Petroleum, represented by William J. Sneed, leased the OGMR for a 141.01-acre tract in Sec 026 and 035, T12N, R11W of DeSoto Parish, Louisiana, to Ajax Gas Corporation.

12/20/1989; 513412; Surface

Sheriff Deed Sale: Federal Land Bank of Jackson vs. William T. Dugan and Martha Outlaw Dugan; Floyd E. Lambert, Sheriff of DeSoto Parish executed a Writ of Seizure of the 363.96-acre tract owned by William T. Dugan and Martha Outlaw Dugan located in Sec 026, 034, and 035, T12N, R11W of DeSoto Parish, Louisiana, and sold the property to the Federal Land Bank of Jackson.

05/26/1989: 516320: Surface

Quitclaim: Federal Land Bank of Jackson executed a quitclaim transfer of the aforesaid property to the Farm Credit Bank of Texas.

06/18/1992; 527580; Surface

Special Warranty Deed: Farm Credit Bank of Texas sold 296.73 acres located in Sec 026, 034, and 035, T12N, R11W of DeSoto Parish, Louisiana, to Anthony Valure.

12/22/1998; 588871; Surface

Cash Deed: Honker Plantation, Inc., represented by Lewis Sams, sold a 71-acre tract located in the Sec 026, T12N, R11W of DeSoto Parish, Louisiana to Donald Wayne Powell and Nancy Myers Powell. The vendors reserved half of the mineral rights.

12/22/1998; 570215; Surface

Credit Sale Deed: Sarah Gayle Place Bouis, Elizabeth Browne Hagewood, Thomas Franklin Waits, Jr., and David Arthur Waits collectively sold a 175-acre tract located in Sec 035, T12N, R11Wof DeSoto Parish, Louisiana, and other property, to Donald Wayne Powell and Nancy Myers Powell. The vendors reserved half of the mineral rights for a period of ten years.

08/01/2001; 588778; Minerals

OGMR Lease Assignment: Trans-Gulf Petroleum, represented by Willard M. Sneed, assigned their full interest in the Varner No. 1 (SN 152795), Varner No. 2 (152863), and Varner No. 3 (SN 194686) wells to Pelican Resource Management, L.L.C.

04/15/2002; 593663; Minerals

OGMR Lease Assignment: Pelican Resource Management, L.L.C., represented by Managing Partner James M. Monk, assigned their full interest in the Varner No. 1 (SN 152795), Varner No. 2 (152863), and Varner No. 3 (SN 194686) wells to Bengal Production Company, Inc.

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THREAT STATUS TABLE

Criteria (1)	Evaluated Specifications	Assessment Value	es	Possible Points	Assess- ment Date 2/18/2003	Current Date 9/4/2003
					Points	Points
Volume (Liquid)	1 Point per 5.8 bbl (41 points if greater than 238 bbl). (2)	121.4 bbl / 5.8 20.	9			
Volume	1 point per 60 yd3 of sludge (Impacted wet sediments with light oil contamination - sheening during agitation).	0 yd3 / 60 0.0	1	Not to		
(Wet Soil) (3)	1 point per 12 yd3 of sludge (Impacted wet sediments with medium oil contamination - sheen present).	0 yd3 / 12 0.0		points	21.1	21.1
Volume (Soil) (3)	1 point per 4 yd3 of sludge/soil (Impacted sediments/soils with heavy oil saturation).	0 yd3 / 4 0.0		(additive by volume		
Volume	1 point per 46 yd3 of soil (Impacted soils with light oil contamination).	6.133 yd3 / 46 = 0.1		criteria).		
(Dry Soil) (3)	1 point per 9 yd3 of soil (Impacted soils with medium oil contamination).	0 yd3 / 9 = 0.0				
Proximity to	Isolated compound > 5,000 feet in distance.			0		
Waterways (4)	$Points = [10 - (distance\ in\ ft/500\ ft)]\ round\ to\ nearest\ whole\ number.$			1-10	10	10
	Over water or visible sheen on surface waters of off-site effluent draina	ge constituents.		10		
	LDNR assigned value of 1 = 8 points	0 wells x 8	0	Not to		
LDNR Well Assigned	LDNR assigned value of 2 = 6 points	0 wells x 6	0	exceed 16	8	8
Values	LDNR assigned value of 3 = 4 points	1 wells x 4	4	points (additive		Ü
	LDNR assigned value of 4 = 2 points	2 wells x 2	4	hv welle)		
	No rust, weeps, leaks, cracks, or breeches in pits.			0		
Container	Rusty, pitted, corroded, cracked, or evidence of breaching from pits.			5	5	5
Condition (5)	Top open or holedPotential overflow from precipitation.			10		3
	Weeping, seeping, or holed (including seepage through pit berm walls).		15		
	Hatches/containers welded or locked, or man ways removed.			0		
Potential for	Hatches/containers accessible, proximal to roads or transportation.			1-7	8	8
Dumping	Containers open, pits, and proximal to roads or transportation.			8		
Accessibility	Security features or fences present, not proximal to persons.			0		
to Wildlife	Limited security features, accessible to persons.			1-9	5	5
and Persons	Within 5,000 ft of residential, open pits or containment with oil.			10		
		To	tal =	100	57.1	57.1
Priority based	on points: Low Threat (0-40) Substantial Thre	at (41-100)	•		Substantial Threat	Substantial Threat

Note (1) Qualitative interpretation prepared by Contractor, based on seven criteria deemed most significant in evaluating potential threat.

- (2) A volume of 238 bbl scores the maximum number of points based on the definition of a major inland discharge being 10,000 gallons (238 bbl) [40 CFR 300].
- (3) For the purpose of estimating threat to the environment from oil in wet and/or dry soils, five scenarios, which are most commonly encountered in field operations are presented. The basis of the values presented for each scenario were derived from the following calculation using an average density, moisture concentration, and oil and grease concentration of contaminated in wet and/or dry soils from historical facility assessment and analytical data:

 [Density of material (lbs/yd3) X Total volume of material (yd3) X [(100-Percent moisture (%))/100] X

[Percent Oil and grease dry weight (%)/100]]/Density of Crude oil (1432.7 lbs/yd3) = Volume of oil and grease (yd3)

- (4) For the purpose of threat evaluation, a waterway is defined as any USGS identified water body or observed significant drainage structure.
- (5) The evaluation of container conditions should include observations of any container on-site including pits, but should be limited to those containers which contain product.

Key: bbl. = Barrel. Ft. = Feet (US). USGS = United States Geological Survey
lbs. = Pounds. % = Percent. yd3 = Cubic yards.

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ENFORCEMENT									
JOP ID: 16-E-1003		Operator	orCode: 6040						
Does the operator have any outstand	ling Compliance Orders	? • Yes C) No						
Compliance Order No(s):	Petroleum Corporation		R suspended the Trans Gulf udit discrepancies, issued one civil d noted that correspondence was						
Are there any on-going releases?	○ Yes	If applicable call: NRC: 1-800-424-8802							
Describe the size, source, type, and	extent of release:	LA Hazardous Materials Ho	lotline: 225-925-6595						

Note facility component deficiencies:

AST1 and AST2 were rusted and corroded and both of the tanks have handles on their lower valves, which could be used by vandals to discharge the tank contents. The secondary containment was compromised. Drainage from the facility flows into the adjacent waterways.

Louisiana Abandoned Oil Facility Database Summary of Facility Container Contents

FPN: E03612

Container Name	Total Capacity (bbl)	Available Capacity (bbl)	Total Volume (bbl)	Water (bbl)	Other Matrix (bbl)	Oil (bbl)	Oily Sludge (bbl)	Total Products (bbl)
AST 1	209.33	30.70	178.63	83.73	0.00	43.26	51.63	94.90
AST 2	209.33	182.81	26.51	0.00	0.00	11.16	15.35	26.51
Total	418.66	213.51	205.14	83.73	0.00	54.43	66.98	121.41

Louisiana Abandoned Oil Facility Database Summary of Facility Containment, Pit, and Oil Impacted Area Contents

Component	Total Capacity	Available Capacity	Wet So	oil (yd3)	Soil (yd3)	Dry Soi	l (yd3)	Total Water	Total Oil	Total Soil
Name	(bbl)	(bbl)	Light (1)	Medium (2)	Heavy (3)	Light (1)	Medium (2)	(bbl)	(bbl)	(yd3)
CONT1	588.49	147.12	0.00	0.00	0.00	6.13	0.00	0.00	0.00	6.13
PIT 1	565.18	125.60	0.00	0.00	0.00	0.00	0.00	439.59	0.00	0.00
PIT 2	142.15	35.54	0.00	0.00	0.00	0.00	0.00	106.61	0.00	0.00
Total	1295.82	308.25	0.00	0.00	0.00	6.13	0.00	546.20	0.00	6.13

Key: bbl = Barrels yd3 = Cubic yards NA = Not Applicable

Footnote: 1. Oil and grease (OG) concentrations ranging from 1 percent (%) to 3% by dry weight (dw).

2. OG concentrations ranging from 3.1% to 20% dw.

3. OG concentrations ranging greater than 20% dw.

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Soil/Sludge Samples Analyzed for LAC.43.XIX.313 (1) Parameters

JOP ID: 16-E-1003

					Parai	meters, U	nits, and 313	1) Regul	atory Lim	nits										
Sample ID	Area	Sample	Depth	Sample	рН	Arsenic	Chromium	Zinc	Oil/ Grease		Barium, True Total	Lead	Cadmium	Silver	Selenium	Electrical Conductivity	Cation Exchange Capacity	Sodium Absorption Ratio	Exchangeable Sodium Percentage	Moisture
_	Sampled	-	Inteval (feet)	Description	S.U.	mg/kg	mg/kg	mg/ kg	%	mg/kg	mg/kg	mg/ kg	mg/kg	mg/ kg	mg/kg	mmhos/cm	S.U.	S.U.	%	%
					6.0- 9.0	10	500	500	1	10	40000*/ 20000**	500	10	250	10	4*/8**	None	12*/14**	15*/25**	50
16E1003-C1-A	CONT1	5/3/2003	0 - 0.25	debris, soil and sandy clay					1.7											39
16E1003-C1-B	CONT1	5/3/2003	0.08 - 1.5	brown sandy clay					0.221											16
16E1003-T1-A	AST1& AST2	5/3/2003	0 - 13	tank contents	7.37	2 U	3.07		15.4	0.095 U	244	69	1 U	1 U	2 U					91

Notes: (1) December 2001 revision of the September 1999 LAC.43.XIX.129.b.7

* Upland areas.

** Freshwater wetland areas not inundated.

--- = Parameter was not analyzed.

U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: % = **Percent.**

LAC = Louisiana Administrative Code. mg/kg = Milligram per kilogram. mmhos/cm = Millimhos per centimeter.

S.U. = Standard units.

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Samples Analyzed for TRPH and RCRA Ignitibility, Corrosivity, and Reactivity Characteristics

JOP ID: 16-E-1003

					Sample Description	on, Parameters, Unit	s, and RCRA Regulate	ory Limits		
Sample ID	Area Sampled	Sample Date	Depth Inteval	Sample Description	ТПРН	Moisture	Ignitability	Corrosivity	Reactive Cyanide	Reactive Sulfide
			(feet)		mg/kg	%	oF	S.U.	mg/kg	mg/kg
					none	none	140	500	250	500
16E1003-T1-A	AST 1 & 2	5/3/2003	0 - 13	tank contents		91	>150	7.37	1 U	8.5 U

Notes ---= Parameter not analyzed

U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: % = Percent.

RCRA = Resource Conservation and Recovery Act TRPH = Total Recoverable Petroleum Hydrocarbons

mg/kg = Milligram per kilogram.

oF = Degrees Fahrenheit. S.U. = Standard units

Louisiana Abandoned Oil Facility Database Summary of Analytical Resultsfor Samples Analyzed for RCRA Toxicity Characteristics - Metals

JOP ID: 16-E-1003

					Sample Descript	ion, CAS RN, and	RCRA Regulatory I	imits for TCLP-Me	tals (mg/L)			
Sample ID	Area Sampled	Sample Date	Depth Inteval (feet)	Sample Description	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
			(leet)		7440-38-2	7440-39-3	7440-43-9	1333-82-0	7439-92-1	7439-97-6	7782-49-2	7440-22-4
					5	100	1	5	5	0.2	1	5
16E1003-T1-A	AST 1 & 2	5/3/2003	0 - 13	tank contents	0.200 U	16	0.100 U	0.100 U	0.200 U	0.0900 U	0.200 U	0.100 U

Notes ---= Parameter not analyzed

U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: RCRA = Resource Conservation and Recovery Act

CAS RN = Chemical Abstract Service - Registry Number

TCLP = Toxicity Characteristic Leaching Proceedure

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Samples Analyzed for RCRA Toxicity Characteristics - Volatiles

JOP ID: 16-E-1003

					Sample Descr	iption, CAS RN	, and RCRA Regu	llatory Limits for	· TCLP-Volatile	s (mg/L)				
Sample ID	Area Sampled	Sample Date		Sample Description	Benzene	Carbon tetrachloride	Chlorobenzene	Chloroform	1, 2-Dichloro- ethane	1, 1- Dichloroethylene	Methyl ethyl ketone	Tetrachloro -ethylene	Trichloro- ethylene	Vinyl Chloride
			(feet)		71-43-2	56-23-5	108-90-7	67-66-3	107-06-2	75-35-4	78-93-3	127-18-4	79-01-6	75-01-4
					0.5	0.5	100	6	0.5	0.7	200	0.7	0.5	0.2
16E1003-T1-A	AST 1 & 2	5/3/2003	0 - 13	tank contents	65 U	65 U	65 U	65 U	65 U	65 U	130 U	65 U	65 U	130 U

Notes ---= Parameter not analyzed

U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: RCRA = Resource Conservation and Recovery Act

CAS RN = Chemical Abstract Service - Registry Number

TCLP = Toxicity Characteristic Leaching Proceedure

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Samples Analyzed for RCRA Toxicity Characteristics - Semivolatiles

JOP ID: 16-E-1003

					Sample De	scription, C	AS RN, and	RCRA Regulator	ry Limits for T	CLP - Semivo	latiles (mg/L)						
Sample ID	Area Sampled	Sample Date	Depth Inteval	Sample Description	o-Cresol	m- Cresol	p-Cresol	1, 4-Dichloro- benzene	2, 4-Dinitro- toluene	Hexachloro - benzene	Hexachloro- butadiene	Hexachloro- ethane	Nitro- benzene	Penta- chloro- phenol	Pyridine	2, 4, 5- Trichloro- phenol	2, 4, 6- Trichloro- phenol
			(feet)		95-48-7	108-39-4	106-44-5	106-46-7	121-14-2	118-74-1	87-68-3	67-72-1	98-95-3	87-86-5	110-86-1	95-95-4	88-06-2
					200	200	200	7.5	0.13	0.13	0.5	3	2	100	5	400	2
16E1003-T1-A	AST 1 & 2	5/3/2003	0 - 13	tank contents	0.057	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.20 U	0.05 U	0.05 U	0.05 U

Notes ---= Parameter not analyzed

 $U = The\ analyte\ was\ analyzed\ for,\ but\ was\ not\ detected\ above\ the\ associated\ concentration,\ which is\ either\ the\ sample\ quantitation\ limit\ or\ the\ sample\ detection\ limit.$

Key: RCRA = Resource Conservation and Recovery Act

 $CAS\ RN = Chemical\ Abstract\ Service - Registry\ Number$

TCLP = Toxicity Characteristic Leaching Proceedure

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Samples Analyzed for RCRA Toxicity Characteristics - Pesticides and Herbicides

JOP ID: 16-E-1003

					Sample Descri	ption, CAS RN, a	nd RCRA Regula	tory Limits for T	CLP - Pesticides	and Herbicides (mg/l	L)		
Sample ID	Area Sampled	Sample Date	Depth Inteval (feet)	Sample Description	Chlordane	Endrin	Heptachlor	Heptachlor Epoxide	Toxaphene	Methoxychlor	Lindane	2, 4-D	2, 4, 5-TP (Silvex)
			(Icci)		57-74-9	72-20-8	76-44-8	76-44-8	8001-35-2	72-43-5	58-89-9	94-75-7	93-76-5
					0.03	0.02	0.008	0.008	0.5	10	0.4	10	1
16E1003-T1-A	AST 1 & 2	5/3/2003	0 - 13	tank contents	0.0020 U	0.0005 U	0.0005 U	0.0005 U	0.0500 U	0.0005 U	0.0005 U	0.0100 U	0.0010 U

Notes ---= Parameter not analyzed

U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: RCRA = Resource Conservation and Recovery Act

CAS RN = Chemical Abstract Service - Registry Number

TCLP = Toxicity Characteristic Leaching Proceedure

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		(CONTAINER DESCRIPT	ION	
JOP ID: 16-E-100)3			Component Shape	ıl Cylindrical
Container Name: Assessment Date:	AST 1 2/18/2003				
Assessment Date.	2/18/2003		Dimensions		
Length:		ft.	Differsions	Water:	6 ft.
Width/Radius:		ft.		vvater: Oil:	3.1 ft.
Base Diameter:	10	ft.			3.1 ft.
Height/Depth:	10	ft.		Oily Sludge: Other Matrix:	3.7 ft. 0 ft.
Height/Depth.	13	11.		Other Matrix:	O It.
			Volumes		
Capacity:	209.33	bbl.		Oil:	43.26 bbl.
Available Capacity:	30.70	bbl.		Oily Sludge:	51.63 bbl.
Water:	83.73			Other Matrix:	0.00 bbl.
ContainerType:			Construction:	Constru	uction Type:
AST Cylindrical			Single Wall Steel	Welded	
Open or R	emoved To		Was container accessed for gauging?	Method of contents est	imation if not gauged
	Vay Opened ty Gas-Fre		● Yes ○ No		
Rusted, Cracked	·	✓	O Adequate	Container is: • Inade	equate
Free Flo	owing Leak		Is secondary containment p	oresent? Containment	Name:
	Seepage		• Yes O No	CONT1	
Latitude (DMS)	31 ° 59	1	29 " North, Longitude	e (DMS) 93 ° 27 '	57 " West
Location Reference	e: Locate	d in eas	t end of CONT1		

Additional comments:

AST 1 had slight to moderate rust. The bottom valves had handles and potentially could be used to empty the tank. Sample 16E1003-T1-A, a composite sample of the contents of AST1 and AST2 contained 50 percent (%) BS&W and had a TOX concentration of 6.3 milligram per kilogram (mg/kg) and a heat of combustion of 57 gross BTU/lb. Sample results for LAC43.XIX.313 parameters and RCRA characteristics are presented in the Analytical Results Table of this report.

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	CONTAINER DESCRIPTION								
Air/NORM	Monitoring: JOI	PID: 16-E-1003	Container Name: AST 1						
Was Air /	NORM monitoring cond	lucted?	• Yes	\bigcirc_{No}					
Location:	Inside Container	Breathing Zone	Outside Container						
Multiple Gas	s Air Monitoring Equipment:	MSA Passport							
LEL:	0 % H2S:	0 PPM CO:	0 PPM O2: 20.8 %						
Location:	Inside Container	Breathing Zone	Outside Container						
Equipment N	Name Ludlum	SN: 180310	Parameter: Radiation Reading:	7 uR/hr					

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JOP ID: 16-E-1003					
Containor Nama				-Component Shape	al Cylindrical
Container Name.	AST 2				
Assessment Date:	2/18/2003				
			Dimensions		
Length:		ft.		Water:	0 ft.
Width/Radius:		ft.		Oil:	0.8 ft.
Base Diameter:	10	ft.		Oily Sludge:	1.1 ft.
Height/Depth:	15	ft.		Other Matrix:	0 ft.
			Volumes		
Capacity:	209.33	bbl.		Oil:	11.16 bbl.
Available Capacity:	182.81	bbl.		Oily Sludge:	15.35 bbl.
Water:	0.00	bbl.		Other Matrix:	0.00 bbl.
ContainerType:			Construction:	Constr	uction Type:
AST Cylindrical			Single Wall Steel	Welded	l
Open or Re			Was container accessed for gauging?	Method of contents est	imation if not gauge
Man Wan Wan Open, Empty	ay Opened y Gas-Fre		● Yes ○ No		
Rusted, Cracked or		✓	O Adequate	Container is: • Inade	equate
Free Flov	wing Leak		Is secondary containment	present? Containment	Name:
	Seepage		• Yes O No	CONT1	
Latitude (DMS)	31° 59	1	29 " North, Longitude	e (DMS) 93 ° 27 '	57 " West

Additional comments:

AST 2 had slight to moderate rust. The bottom valves had handles and potentially could be used to empty the tank. Sample 16E1003-T1-A, a composite sample of the contents of AST1 and AST2 contained 50 percent (%) BS&W and had a TOX concentration of 6.3 milligram per kilogram (mg/kg) and a heat of combustion of 57 gross BTU/lb. Sample results for LAC43.XIX.313 parameters and RCRA characteristics are presented in the Analytical Results Table of this report.

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CONTAINER DESCRIPTION						
Air/NORM	Monitoring: JOI	PID: 16-E-1003	Container Name: AST 2			
Was Air /N	NORM monitoring cond	lucted?	• Yes	$\bigcirc_{ m No}$		
Location:	Inside Container	Breathing Zone	Outside Container			
Multiple Gas	Air Monitoring Equipment:	MSA Passport				
LEL:	0 % H2S :	0 PPM CO :	0 PPM O2: 20.8 %			
Location:	○ Inside Container	Breathing Zone	Outside Container			
Equipment N	Name Ludlum	SN: 180310	Parameter: Radiation Reading:	7 uR/hr		

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CONTAINMENT DESCRIPTION

JOP ID: 16-E-1003 **Assessment Date:** 2/18/2003 Containment Name: CONT1 **Containment Orientation:** Rectangular Length: 69 ft. Oil 0 ft. Sediment Water Category 0 ft. Width/Radius: 24 ft. Layer A 0.1 ft. Dry-Light (1%-3% OG) Base Diameter: 0 ft. Layer B 1.4 ft. Below Regulatory Level Height/Depth: 2 ft. Layer C 0 ft. **Volume Totals:** Wet Soil Totals (yd3): Dry Soil Totals (yd3): Capacity: 588.49 bbl 1%-3% OG (Light): 0.00 1%-3% OG (Light): 6.13 **Available Capacity:** 147.12 bbl 3.1%-20% OG 3.1%-20% OG 0.00 0.00 Water: 0.00 bbl (Medium): (Medium): Oil: 0.00 bbl Greater than 20% OG (Heavy): 0.00 **Soil > 1.0% OG:** 6.13 yd3 31 ° 57 " West 59 ' 29 " 93° 27 ' Latitude (DMS) North, Longitude (DMS) **Location Reference:** Containment Type:Berm Construction Material: Earthen **Construction Type:** Excavation Containers encompassed by Is containment accessible for gauging? Yes \bigcirc No secondary containment: If not, estimate contents AST 1 and explain reason: AST 2 Is capacity sufficient for the largest container? O Yes No Inadequate Secondary containment condition is: O Adequate Is residual oil present inside the secondary containment? O Yes No If yes, state location: O Yes No Are breaches in the secondary containment berm present? If yes, state location:

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CONTAINMENT DESCRIPTION

Container Name: CONT1 JOP ID: 16-E-1003

Additional comments:

There were vines, trees, and brush growing in and on the containment berm. Animal burrows were also noted in the berms. Analysis of 16E1003-C1-A indicated that 1 to 3-inch thick layer of leaf debris, soil and sandy clay was oil-impacted. Analysis of 16E1003-C1-B indicated that underlying brown sandy clay was not oil-impacted. Depth and dimensions were averaged for volume calculations.

Air/NORM Monitoring:

Was Air/NORM monitoring cond	ucted?	Yes	○ No
Location:	Breathing Zone	Outside Container	
Multiple Gas Air Monitoring Equipment	: MSA Passport		
LEL: 0 % H2S:	0 PPM CO:	0 PPM O2: 20.7 %	
Location: • Inside Container	Breathing Zone	Outside Container	
Equipment Name Ludlum	SN: 180310	Parameter: Radiation Reading:	7 uR/hr
Has sampling been conducted?	• Yes O _{No}	If yes analytical results are presen	nted in main table.

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

	PIT DESCRIPT	ION		
JOP ID: 16-E-1003		Assessme	nt Date: 2/18/2003	
Pit Name: PIT 1		Pit Orien	tation: Circular	
Length: ft.	Oil	0 ft.	Sediment	
Width/Radius: ft.	Water	3.5 ft.	Category	
Base Diameter: 30 ft.	Layer A	$-\frac{0}{0}\frac{\text{ft.}}{0}$		
Height/Depth: 4.5 ft.	Layer B Layer C	$- \frac{0}{0} \frac{\text{ft.}}{\text{ft.}}$		
Volume Totals:	Wet Soil Totals		Dry Soil Totals (yd3):	
Capacity: 565.18 bbl	1%-3% OG (Light):	0.00	1%-3% OG (Light):	0.00
Available Capacity: 125.60 bbl	3.1%-20% OG	0.00	3.1%-20% OG	0.00
Water: 439.59 bbl	(Medium):	0.00	(Medium):	0.00
Oil: 0.00 bbl				
Soil > 1.0% OG: 0.00 yd3	Greater than	20% OG (He	avy): 0.00	
LDNR Pit ID:	LDNR Pit Status:		Associated Well SN:	
16P419	99- Open Orph Discove	ry	152863	
Latitude (DMS)	' North, Longitue	de (DMS)	° ' ' West	
Location Reference: 30 feet west of SN	152863.			
PitType:	Construction:		Construction Type:	
Reserve Pit	Dirt		Berm Aboveground	
Liner:				
Low Permeability Soils (Clay)				
Surface water sheen observed?	○ Yes • No			
If yes, describe:				
Residual oil present?	○ Yes • No			
If yes, state location:				
Breaches present?	○ Yes • No			
If yes, state location:				
Additional comments: PIT1 was covered in green algae and trees ar sediment was agitated. PIT1 was not fully de LDNR will address the pit in an upcoming an	lineated due to the refusal of	of the written a	access agreement by the landowne	r.

If yes, analytical results are presented in main table.

 \bullet_{No}

Has sampling been conducted? \bigcirc Yes

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

		PIT I	DESCRIP	ΓΙΟΝ			
JOP ID: 16-E-1003				Assessme	ent Date:	2/18/2003	
Pit Name: PIT 2				Pit Orien	itation:	Rectangular	
Length:	40 ft.	Oil		0 ft.		Sediment	
Width/Radius:	10 ft.	Water	r	1.5 ft.		Category	
Base Diameter:	0 ft.	Layer	Α	0 ft.		. — — — — — -	
Height/Depth:	2 ft.	Layer		$\frac{0}{2}$ ft.			
		Layer	-	0 ft.			10)
Volume Totals:	140 15 111	i e	et Soil Totals			Dry Soil Totals (yd	
Capacity: Available Capacity:	142.15 bbl 35.54 bbl	1%-3% OC		0.00		OG (Light):	0.00
Water:	106.61 bbl	3.1%-20% (Medium):	OG	0.00	3.1%-20% (Medium		0.00
Oil:	0.00 bbl	(iviculum).					0.00
Soil > 1.0% OG:	0.00 yd3		Greater tha	an 20% OG (He	avy): (0.00	
LDNR Pit ID:		LDNR P	it Status:		A	Associated Well SN	N:
16P418		99- Open	Orph Discov	ery	1	152863	
Latitude (DMS) °	' "	North,	Longit	ude (DMS)	0	' " We	est
Location Reference: 10 fee	et west-south	west of SN 1	152863.				
 PitType:		Construc	ction:		(Construction Type	:
Reserve Pit		Dirt				Sunken Depression/	
Liner:						_	
Low Permeability Soils (Clay)							
Surface water sheen observed	?	O Yes	● No				
If yes, describe:							
Residual oil present?		○ Yes	⊙ No				
If yes, state location:							
Breaches present?		\bigcirc_{Yes}	⊙ No				
If yes, state location:							
Additional comments: Trees and miscellaneous vegetat was not fully delineated due to the							

Has sampling been conducted? \bigcirc Yes \bigcirc No If yes, analytical results are presented in main table.

upcoming area State Oilfield Site Restoration package.

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

			WELL I	DESCRIPTIO	N				
Well Name:	Varner			Well No.: 00	1 .	JOP ID:	16-E-100	3	
Association:	Proximity								
Direction:	NE]	Proximity (fee	et): 70					
LDNR Serial	No.: 152795	LDNR S	Serial Source:	LDNR records					
LDNR Well S	tatus: 23	ACT 404 C	RPHAN WEL	L-ENG	LDNF	R Well Pr	iority: 3	Mod	derate
Projection Na	me:		Lan	ıbert X:		Lamb	ert Y:		
Latitude:	31 °	59 ' 2	9.6 " North	Longi	tude:	93 °	27 '	56.6	West
Inspection Da	te: 2/1	8/2003 Ins p	ection Time:		Condition	corro	ded		
Parish: DES	ОТО								
Section: 26	į	Townsh	ip: 12	N	Range:	11	W		
Terrain: up	land	Ele	vation: 15	inches	above	grad	le		
Status: no	t flowing - cor	nnected							
Is well current	tly leaking oil	?	○ Yes	No					
Leaking oil co	mments:								

Additional well comments:

A pump jack and truck mounted "casing swab rig" were at the well site. The wellhead was removed and a "casing swab rig" was attached to the casing. An empty 55-gallon drum was noted west of the well. Radiation readings of 7μ R/hr were observed during NORM screening of the well. According to LDNR records, the outer casing is 8-5/8 inches in diameter with a lower set depth of 156 feet. The inner casing is 4-1/2 inches in diameter with a lower set depth of 2,820 feet. The inner casing is perforated between 2,511 feet and 2,594 feet. The well tubing is 2-3/8 inches in diameter with a lower set depth of 2,480 feet.

Operator History:			
Operator	Operator Code	Acquisition Date	Transfer Date
TRANS-GULF PETROLEUM CORP	6040	6/1/1984	
VANDER-GRAHAM EXPLORATION, INC	6157	12/1/1976	6/1/1984
MONTE CARLO EXPLORATION INC.	4226	7/1/1976	12/1/1976

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

			WELL I	DESCRIPTI	ON				
Well Name:	Varner			Well No.: 00	02	JOP ID:	16-E-100	13	
Association:	Proximity								
Direction:	WSW	Pr	oximity (fee	t): > 1000					
LDNR Serial I	No.: 152863	LDNR Ser	rial Source:	LDNR records					
LDNR Well S	tatus: 23	ACT 404 OR	PHAN WEL	L-ENG	LDN	R Well Pr	iority: 4	Low	
Projection Na	me:		Lam	bert X:		Lamb	ert Y:		
Latitude:	31 °	59 ' 20.3	3 " North	Long	gitude:	93 °	28 '	44.2	West
Inspection Dat	te: 2/1	8/2003 Inspec	ction Time:		Condition	: corro	ded		
Parish: DES	ОТО								
Section: 34		Township:	12	N	Range:	11	W		
Terrain: up	land	Elevat	tion: 15	inches	above	grad	e		
Status: op	en casing								
Is well current	tly leaking oil	?) Yes	No					
Leaking oil co	mments:			_					

Additional well comments:

A pump jack unit and metal stand were located at the well site. The wellhead was removed and the casing was open. Radiation readings of 7μ R/hr were observed during NORM screening of the well. The outer casing is 8-5/8 inches in diameter with a lower set depth of 155 feet. The inner casing is 4-1/2 inches in diameter with a lower set depth of 2,865 feet The casing is perforated between 2,508 and 2,657 feet. The well tubing size and lower set depth are not defined in the LDNR SONRIS database.

Operator History:			
Operator	Operator Code	Acquisition Date	Transfer Date
TRANS-GULF PETROLEUM CORP	6040	6/1/1984	
VANDER-GRAHAM EXPLORATION, INC	6157	12/1/1976	6/1/1984
MONTE CARLO EXPLORATION INC.	4226	8/1/1976	12/1/1976

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

			WELL I	DESCRIPTI	ON				
Well Name:	Varner			Well No.: 0	03	JOP ID:	16-E-100	13	
Association:	Proximity								
Direction:	WSW	Prox	ximity (fee	t): > 1000					
LDNR Serial	No.: 194686	LDNR Seria	al Source:	LDNR records					
LDNR Well S	tatus: 23	ACT 404 ORPI	HAN WEL	L-ENG	LDN	R Well Pı	riority: 4	Low	1
Projection Na	me:		Lam	bert X:		Lamb	ert Y:		
Latitude:	31 °	59 ' 23.4	" North	Lon	gitude:	93 °	28 '	27.3	West
Inspection Da	te: 2/1	8/2003 Inspect	ion Time:		Condition	n: corro	ded		
Parish: CAI	DDO								
Section: 35		Township:	12	N	Range:	11	W		
Terrain: up	land	Elevation	on: 18	inches	above	grad	le		
Status: op	en casing								
Is well current	tly leaking oil	?	Yes	No					
Leaking oil co	mments:			·					

Additional well comments:

The open casing was surrounded by heavy vegetation. Radiation readings of $11\mu R/hr$ were observed during NORM screening of the well. Casing, perforation, and tubing data for the well were not provided in the LDNR well file. The well was completed be L.B. Levall and Associated (no operator code).

Operator History:			
Operator	Operator Code	Acquisition Date	Transfer Date
TRANS-GULF PETROLEUM CORP	6040	11/1/1984	
INACTIVE OPERATOR	9999	9/1/1984	11/1/1984

Louisiana Abandoned Oil Facility Database Ground -Truth Survey Summary Report

PREVIOUS FACILITY OPERATORS

Operator Code: 4226 Business Name: MONTE CARLO EXPLORATION INC.

First Name: Last Name: Phone:

Street: 1104 Bellaire Blvd City: Bossier City State: LA Zip: 71112

Comment:

Operator Code: 6157 Business Name: VANDER-GRAHAM EXPLORATION, INC

First Name: Last Name: Phone:

Street: No information available. City: State: Zip:

Comment:

EPA No.: 16-E-1003 FPN: E03612

APPENDICIES:

- 1. Site Location Maps
- 2. Site Sketch
- 3. Photographic Documentation
- 4. Ground Truth Survey Field Data Sheets
- 5. Logbook Documentation
- 6. Access Agreements
- 7. Landowner Records
- 8. Mineral Rights Records
- 9. Operator Records
- 10. LDNR Information
- 11. LOSCO Information
- 12. Sampling QA/QC Work Plan
- 13. Health and Safety Plan
- 14. Chain of Custody Forms
- 15. Analytical Laboratory Results
- 16. Records of Communication
- 17. Interim Deliverables
- 18. Final POLREPS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

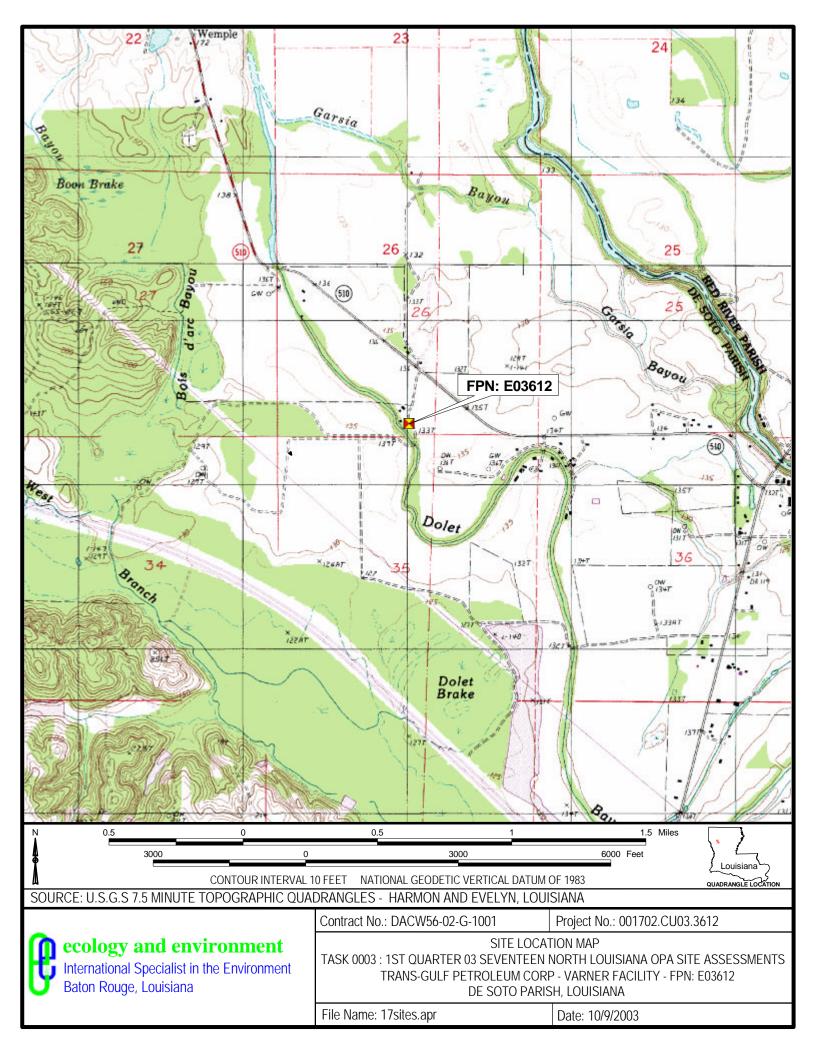
EPA No.: 16-E-1003 FPN: E03612

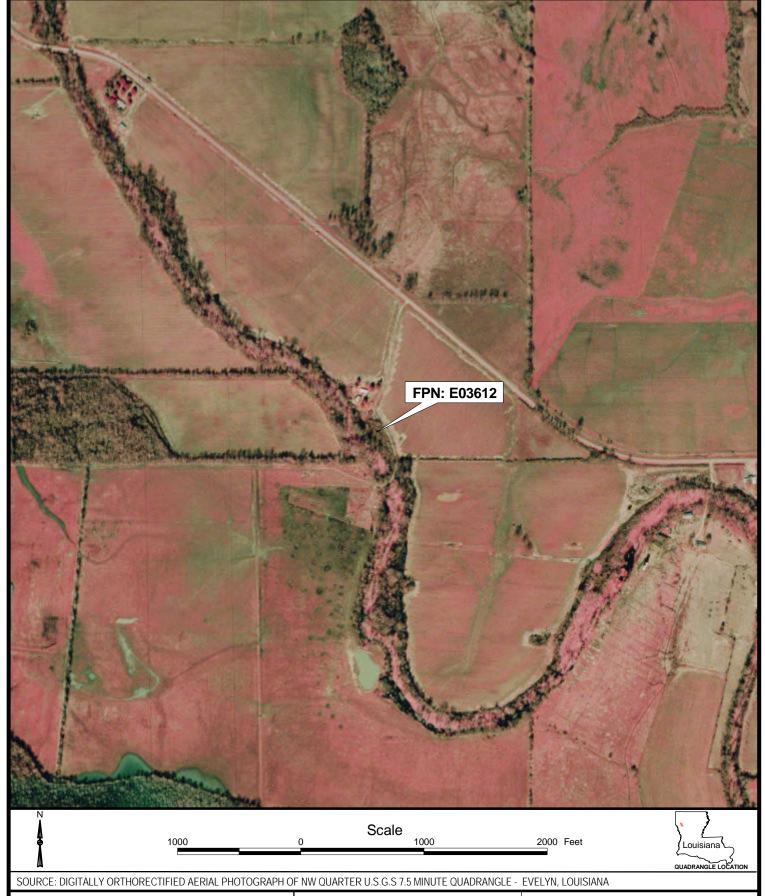
APPENDIX 1

SITE LOCATION MAPS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003





ecology and environment
International Specialist in the Environment
Baton Rouge, Louisiana

Contract No.: DACW56-02-G-1001

Project No.: 001702.CU03.3612

AERIAL IMAGE

TASK 0003 : 1ST QUARTER 03 SEVENTEEN NORTH LOUISIANA OPA SITE ASSESSMENTS TRANS-GULF PETROLEUM CORP - VARNER FACILITY - FPN: E03612 DE SOTO PARISH, LOUISIANA

File Name: 17sites.apr

Date: 10/9/2003

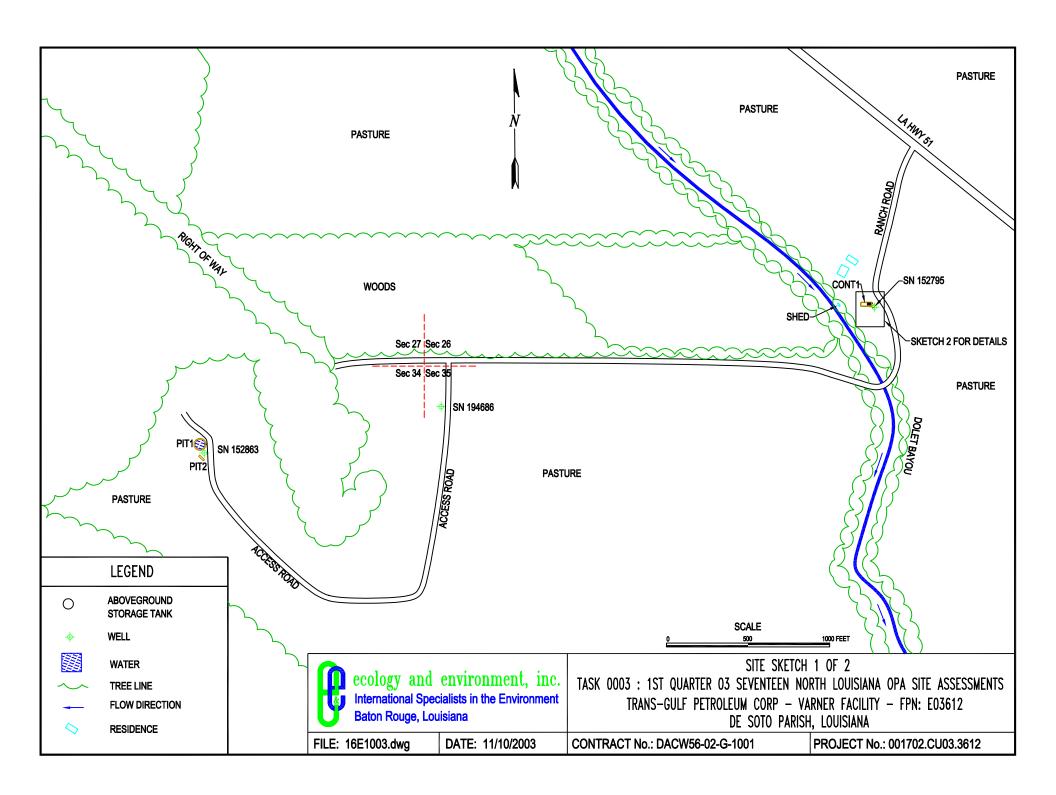
EPA No.: 16-E-1003 FPN: E03612

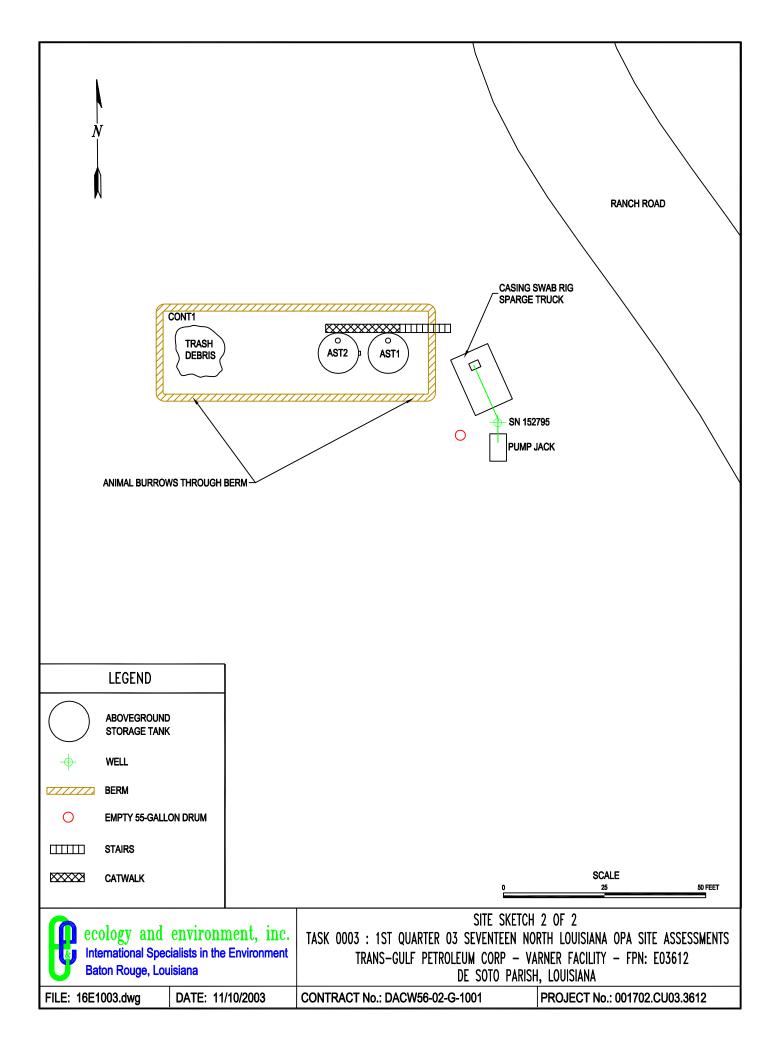
APPENDIX 2

SITE SKETCH

16E1003.pdf Contract: DACW5602G1001

Task No.: 003





EPA No.: 16-E-1003 FPN: E03612

APPENDIX 3

PHOTOGRAPHIC DOCUMENTATION

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

PAGE: 1 / 1 10/29/2003

Louisiana Abandoned Oil Facility Database Facility Photograph List

JOP ID: 16-E-1003

DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER/WITNESS
2/18/2003	17:00	0101	ENE	16-E-1003: Varner Well No. 002 (SN 152863).	Farrell, Justin / James, Paul
2/18/2003	17:05	0102	SW	16-E-1003: PIT1 (LDNR Pit ID 16P419).	Farrell, Justin / James, Paul
2/18/2003	17:06	0103	W	16-E-1003: PIT2 (LDNR Pit ID 16P418).	Farrell, Justin / James, Paul
2/18/2003	17:06	0104	SW	16-E-1003: Varner Well No. 001 (SN 152795). Note attached "swab" rig.	Farrell, Justin / James, Paul
2/18/2003	18:02	0105	S	16-E-1003: Varner Well No. 001 (SN 152795).	Farrell, Justin / James, Paul
2/18/2003	18:04	0106	E	16-E-1003: Empty drum located west of Varner Well No. 001 (SN 152795).	Farrell, Justin / James, Paul
2/18/2003	18:06	0107	NW	16-E-1003: Facility tank battery (CONT1, AST1, and AST2) .	Farrell, Justin James, Paul
2/18/2003	18:20	0108	NW	16-E-1003: Varner Well No. 003 (SN 194686).	Farrell, Justin / James, Paul



 Site Name:
 Trans - Gulf Petroleum Corp. - Varner
 Project No.:
 001702.CU03.3612

 Photo No.:
 0101
 Direction:
 ENE
 Contract No.
 DACW56-02-G-1001

 Date:
 02/18/2003
 Time:
 5:00:00 PM Photographer/Witness:
 Farrell, Justin/James, Paul

Description: 16-E-1003: Varner Well No. 002 (SN 152863)



 Site Name: Trans - Gulf Petroleum Corp. - Varner
 Project No.: 001702.CU03.3612

Photo No.: 0103Direction: WContract No. DACW56-02-G-1001Date: 02/18/2003Time: 5:06:00 PM Photographer/Witness: Farrell, Justin/James, Paul

Description: 16-E-1003: PIT2 (LDNR Pit ID 16P418).



Site Name: Trans - Gulf Petroleum Corp. - Varner Project No.: 001702.CU03.3612

Photo No.: 0102Direction: SWContract No. DACW56-02-G-1001Date: 02/18/2003Time: 5:05:00 PM Photographer/Witness: Farrell, Justin/James, Paul

Description: 16-E-1003: PIT1 (LDNR Pit ID 16P419)



Site Name: Trans - Gulf Petroleum Corp. - Varner Project No.: 001702.CU03.3612

 Photo No.:
 0104
 Direction:
 SW
 Contract No.
 DACW56-02-G-1001

 Date:
 02/18/2003
 Time:
 5:06:00 PM
 Photographer/Witness:
 Farrell, Justin/James, Paul

Description: 16-E-1003: Varner Well No. 001 (SN 152795). Note attached "swab" rig.



 Site Name: Trans - Gulf Petroleum Corp. - Varner
 Project No.: 001702.CU03.3612

 Photo No.: 0105
 Direction: S
 Contract No. DACW56-02-G-1001

 Date: 02/18/2003
 Time: 6:02:00 PM Photographer/Witness: Farrell, Justin/James, Paul

Description: 16-E-1003: Varner Well No. 001 (SN 152795).



 Site Name: Trans - Gulf Petroleum Corp. - Varner
 Project No.: 001702.CU03.3612

 Photo No.: 0107
 Direction: NW
 Contract No. DACW56-02-G-1001

Time: 6:06:00 PM Photographer/Witness: Farrell, Justin/James, Paul

Description: 16-E-1003: Facility tank battery (CONT1, AST1, and AST2).

Date: 02/18/2003



 Site Name: Trans - Gulf Petroleum Corp. - Varner
 Project No.: 001702.CU03.3612

 Photo No.: 0106
 Direction: E
 Contract No. DACW56-02-G-1001

Date: 02/18/2003 Time: 6:04:00 PM Photographer/Witness: Farrell, Justin/James, Paul Description: 16-E-1003: Empty drum located west of Varner Well No. 001 (SN 152795).



Site Name: Trans - Gulf Petroleum Corp. - Varner Project No.: 001702.CU03.3612

Photo No.: 0108Direction: NWContract No. DACW56-02-G-1001Date: 02/18/2003Time: 6:20:00 PM Photographer/Witness: Farrell, Justin/James, Paul

Description: 16-E-1003: Varner Well No. 003 (SN 194686).

EPA No.: 16-E-1003 FPN: E03612

APPENDIX 4

GROUND TRUTH SURVEY FIELD DATA SHEETS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

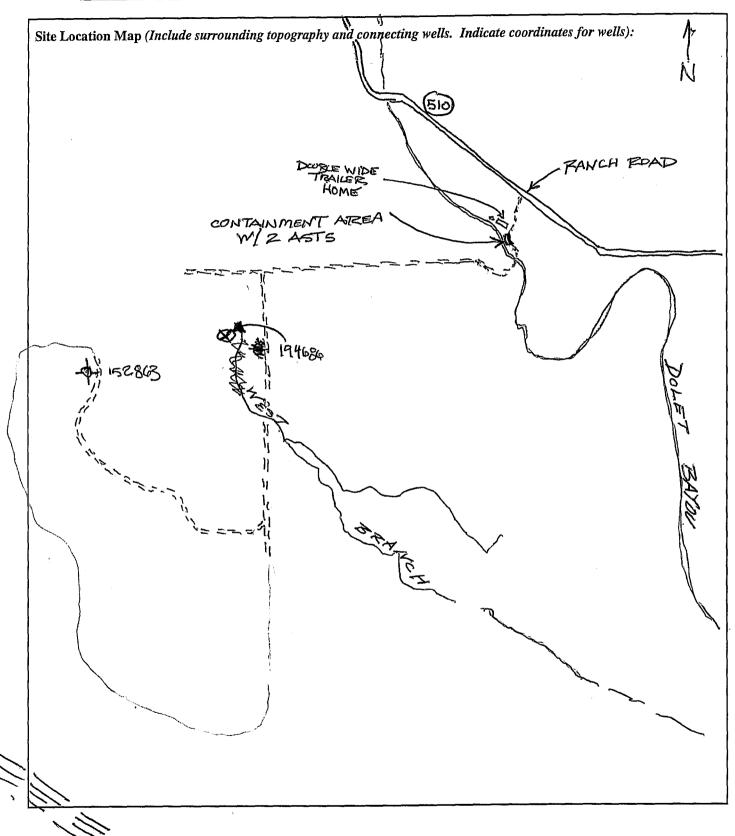
JOP ID: 16-E-1003

Louisiana Abandoned Oil Facility Assessment JOP Ground-Truth Survey Field Data Sheet

E&E Survey 2/18/2003 Members PAUL JAMES, PATRICK JOHNSON, JUSTIN FARRELL (E) E Date(s): Attending:						
LOSCO ID(s):			LDNR ID(s):			
Latitude: Longitude:	GPS		Sec/T/R: 34/12N/11W		Size (in acres):	
31° 59'29.0" 93°27' 5	7.0" Diff				250	
	DOP	1.5				
Facility Name: Trans-Gulf Petroleum Corp Varner Jurisdictional Zone: I EPA Streve.					onal Zone: III	
Oil Field Name: Red River Bull Bayou (7651)						
Quad Map (name and number): Evelyn (31093H4)						
Operator (name, telephone number, and address): Trans-Gulf Petroleus m Cop (6040) Landowner (name, telephone number, and address): Donny Powell (400 Hwy 510 Huy 510 Mans Field, LA 71062 Access coordination: LDNR Buddy Bufkliz						
Number of anticipated components (Note any not located):						
Containers: 2-210 bbl stock Wells: 3 wells						
Containments:	Pits: 2 pits 1-30'diameter 16P419					
Other:						

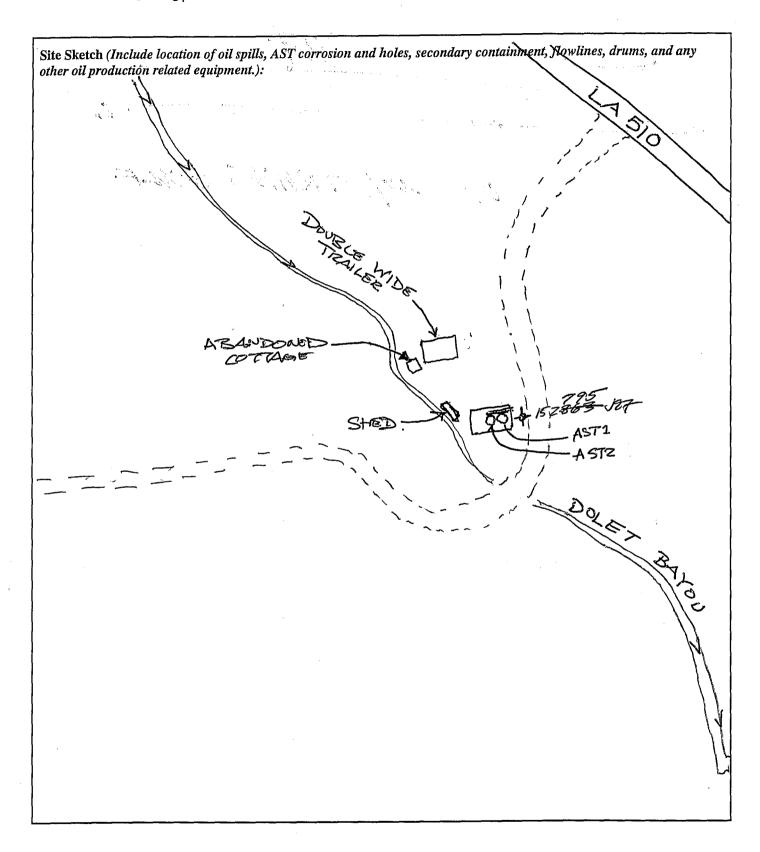
Nearest City (name, direction and distance):
Town of Constatta is located approximately so miles east-northeast of the facility.
Directions to Site (by land or water from nearest main road and/or waterway): From the City of Dhreve port heed east on Interstate 20 until you neach the intersection with Interstate 49 (I-49). Take a right on I-49 and head swith until you neach the intersection of I-49 and US Hury 84. Take a left on US Hury 84 and head east for approximately 3 mile. At this point you take a right on IA Hury 510 and head swith for approximately 8 miles. There will be a dirt access road (Ranch hoad) heading south from LA Hury 510 at this scient. Take a right and proceed climar Ranch Road and the facility is located to the right or mothwest of Ranch Road.
Is facility over water? Yes No
Distance from facility to known surface water or drainage 2/00 feet. miles
Drainage route to/from the facility to the Nearest Navigable Waterway: to the facility to the Nearest Navigable Waterway: to DOLET BAYOU. thence into DRAINS TO THE SW FOR 100 FOR BAYOU Pierre, which flows into the Red River. The Red River is marrigable in fact and subject to interstate commerce.
Nearest downstream waterway (Name, direction, and distance): Dolet Baryon is located approximately 34 miles past of the facility
Nearest Drinking Water Source or Inlet. (name, direction and distance from facility). No writable win 50 miles down agadient of the facility
How many residents located within a 1-mile radius of the site: $$ $\!$ $\!$ $\!$ $\!$ $\!$ $\!$ $\!$ $\!$ $\!$ $\!$
GIS Reviewer(s)(Initial reviewed components):

Describe Surrounding Property (all directions): N: RESIDENTIAL — ONE DUTLE WIDE TRAILER W ABANDONED HOUSE. S: LIGHT WOODS & PIELDS E: CITCOP HELLOS W: THE BAYOU (DOLET) SURREUNDED BY/LINE WITH TREES/BRUSH: Are There Visible Signs of Human or Wildlife Access to the Site? TRASH DEBRIS IN CONTAINMENT AREA (CONT-1), ANIMAL EURIZONS IN CONT 1 - TEERM Recommendations (note "SPCC type" equipment deficiencies, removal potential, etc.) Non - Slope oil (DEB) 157 Describe any On-Going Release (material spilled, cause, area impacted, estimated quantity) - Notify NRC/State/USCG Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Villized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) MANAMARM 180310 5 MA/AT AMAMARM 180310 6 MA/AT AMAMARM 180310	Type and Condition of S	Security Features (i.e., fence	e, signs, gates): NONE	
N: TESTIDENTIAL - ONE DOTALE WIDE TRAILER W ABANDOUGH HOUSE. S. LIGHT WOODS & FIELDS E. CROP FIELDS W: THE BAYOU (DOLET) SURREUNDED BY/LINE WITH TREES/BIZUSH; WITHE TRAYOU (DOLET) SURREUNDED BY/LINE WITH TREES/BIZUSH; ARE There Visible Signs of Human or Wildlife Access to the Site? TRASH DEBZIS IN CONTAINMENT AREA (CONT-1). ANIMAL BURIZONS IN CONT 1 - RETEM Recommendations (note "SPCC type" equipment deficiencies, removal potential, etc.) NON - Sloge Oil (DUB) STT Describe any On-Going Release (material spilled, cause, area impacted, estimated quantity) - Notify NRC/State/USCG Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Utilized: Equipment Utilized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) MSA PASSPAT (C5-3983.3) 0/1EL/208 of A25/0 CO	Describe Surrounding F	Property (all directions):		
TRASH DEBIZIS IN CONTAINMENT AIZEA (CONT-1), ANIMAL BURLIZONS IN CONT 1 - TSETEM Recommendations (note "SPCC type" equipment deficiencies, removal potential, etc.) Non - 5 logs oil (BEB) STT Describe any On-Going Release (material spilled, cause, area impacted, estimated quantity) - Notify NRC/State/USCG Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Utilized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) LUMMAN 180310 SUR/AT MASA PASSINAT C5-3983-3 O/LEL/288 & ORDER O ARS/O CO	N. RESIDENTIA	L - ONE DURL		•
Recommendations (note "SPCC type" equipment deficiencies, removal potential, etc.) Non - slope oil (BCB) STT Describe any On-Going Release (material spilled, cause, area impacted, estimated quantity) - Notify NRC/State/USCG Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Utilized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) LULLY 1803 D	TRACLI DE	RIZIS IN CONTA	INMENT AREA (CONT-1)),
Describe any On-Going Release (material spilled, cause, area impacted, estimated quantity) - Notify NRC/State/USCG Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Utilized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) LULLY 1803 0	ANIMAL BL	DRIZONS IN CON.	TY- ISBRM	
Describe any On-Going Release (material spilled, cause, area impacted, estimated quantity) - Notify NRC/State/USCG Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Utilized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) LULLY 1803 0				
Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Utilized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) MSA PASSport C5-3983 3 0/LEL/208 02/0 H2S/0 C0				
Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Utilized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) MSA PASSport C5-3983 3 0/LEL/208 02/0 H2S/0 C0				
Immediately if impact present or immanent (NRC 1-800-424-8802): Equipment Utilized: Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) MSA PASSport C5-3983 3 0/LEL/208 02/0 H2S/0 C0				
Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) MSA Passport C5-39833 0% LEL / 208 02 / 0 H25 / 0 C0				otify NRC/State/USCG
Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) MSA Passport C5-39833 0% LEL / 208 02 / 0 H25 / 0 C0				
Equipment Name Serial Number Background Reading(s) Background Location (note location on sketch) MSA Passport C5-39833 0% LEL / 208 02 / 0 H25 / 0 C0				
MSA Passport C5-39833 0% LEL/208 02/0 H2S/0 C0	Equipment Utilized:			
MSA Passport C5-39833 0/LEL/208 02/0425/0 CO	Equipment Name	Serial Number	Background Reading(s)	
	Ludlum	180310	5 uR/hr	1
FID CZ-EM-209 & ppm near Powell residen	MSA Passport	C5-3983.3	01. LEL/20.8 or/ 0 H2S/ 0 CO	,
	FID	CZ-EM-209	2 blow	near Powell residen



Page 4 of 15

FPN: ED3612



Additional Comments: (Document conversations with residents, LDNR, etc)

which the TB & SN 152795 sit). Mr. Powell of the the wells for the operators (vanderlay?) oluving the early 19805. The landowner stated that the operator dumped a non E&P oil oily substance not originating for from the wells. DEQ conducted an investigation of an associated site (same operator) with similar claims & determined the substance to be a non specific waste oil (non NOW). (4) throught to be of sof contractors on-site for purposes of assessment

5/3/2003 MACE contractor (ESE) Beeson; Barker; 8-Bocdelon mobilize to facility to sample (EST. 3 Sumples: CONT 1 & tunks)

EPA Cooper: USACE to conduct removal of tanks CONT1, while LOWR will cover PIT1 & PITZ FPN: **EP361**7

Date	Time	Roll/ Frame	Dir.	Description '	P/W
2/18/03	ENE 11700		ENE	WELL SN 152863	JF
1 /	17:05		SW	PIT 1 (LONR PIT 10 169419)	
वाश्रेष्ट	1706	1/3	W	PITZ (LONR PIT 10 16P418)	
4 19/03	(8%)	1/4	SW	WELL W/ SWAB RIG SN: 152795	
2)19/3	(80Z,	1/5	S	CLOSE UP OF WIELL SNI 152795	
2/17/05	1804	1/4	£	DRUM WEST OF WELL,	
419/97	1806	77	NN	TANK BATIONES	
2(1)63	18124	1/8	NW	WELL 194686	
5/3/03	0850	2/1	S	SAMPLING ASTS PISK	AB
5/3/02	0852	2/2	S	// n	
93/03	D	43	S	View of Sample 16 E1003-T/1-A	1
	,				
				A	
:				To Comment of the com	
	1				

Well Status Table:			
Complete for each well	·		
Well Name and Number:	4 2 2		
Carial Mumban	7-002	1, ,,	DOD,
Serial Number: 152863	Lalitude: 3/-59-21.3	Longitude: 93-28-44.2	DOP:
Well Status: pen Casing	31-59-20.3 Condition: Rusted-Corr.	93-28-44,2 Terrain: Upsland	
Is Oil Leaking? Y/N If Yes, Desc	ribe:	,	
Well Association:	Grade:	Elevation (inches):	
LONR	Above	15"	
NORMAir Monitoring: hudlum =	7 MR/hr		
Comments (describe well, pumping uni	·		
PJU present/di	en an antod		
PJU present / dis	COMMEDIEN		
Well Name and Number: Varner	ØØ.3		
Serial Number: 194686	Latitude: 31-59-23,4	Longitude: 93-28-27.3	DOP:
Well Status: open Casing	Condition: Corroded	Terrain: Upland	
Is Qil Leaking? Yes / If Yes, Descri	ribe:		
IND.			
Well Association: LONR/Flow	Grade: Above	Elevation (inches):	
NORM/Air Monitoring	<i>'</i>		
Ludlum = 11 uR/			
Comments (describe well, pumping unit	attached, etc.):	0.01	<i>i</i> ·
surrounded by vege to E. @ 10	tation; valve buried	mder ground; thous	line
approx 150, W. =		1	

Well Status: Disconnected, Capped, Open Casing, Flowing, Not Flowing-Connected, Undetermined, and Not Located.

Condition: Corroded, Leaking, Seeping, Pool Around, Previous Signs of Leakage, Associated Pipe Leaking, and Associated Pipe Seeping. Terrain: Upland, Lowland, Marsh, and Water.

Well Association: Tank battery signs, Verbal-Field Personnel, Proximity, Flow line (Visible), Flow line (Gradeometer), Flow line (Semi-Submerged)

Grade: Above, At, Below, Unknown

FPN: EØ3612

JOP ID: 6 E-1003

Well Status Table:			
Complete for each well	•		
Wall Name and Numbers	R-001		
Serial Number: 152795	Latitude: N 31° 59' 29.60".	Longitude: W93° 27' 56.6°	DOP:
Well Status: SEE BELOW	Condition: Corrocks	Terrain: HIGHLAND	
Is Oil Leaking? Y/(N) If Yes, Desc	cribe: NA		
Well Association:	Grade:	Elevation (inches):	
NORM/Ain Monitoring	111010		
NORM/Air Monitoring: NOTZM: 7 MTZ/	- BR		
Comments (describe well, pumping uni	t attached, etc.):		
NOTE: A TRUCK MOUNTE	D SPARGING RIG IS ATTA	CHED TO THE WELL (SEE TI	ر واه
NO SIGNS OF	it attached, etc.): D SPARGING RIG IS ATTA LEAKING OR "SWAB"	; Empty drum 100	cated
	-	West of we	11
		10031	
Well Name and Number:			
Serial Number:	Latitude:	Longitude:	DOP:
Well Status:	Condition:	Terrain:	
Is Oil Leaking? Yes / If Yes, Desc	ribe:		
No			
Well Association:	Grade:	Elevation (inches):	
NORM/Air Monitoring:			
1,021,21,21,21,21,21,21,21,21,21,21,21,21,2			Ì
		· · · · · · · · · · · · · · · · · · ·	
Comments (describe well, pumping uni	t attached, etc.):		
			ŀ
]
	,]

Well Status: Disconnected, Capped, Open Casing, Flowing, Not Flowing-Connected, Undetermined, and Not Located.

Condition: Corroded, Leaking, Seeping, Pool Around, Previous Signs of Leakage, Associated Pipe Leaking, and Associated Pipe Seeping. Terrain: Upland, Lowland, Marsh, and Water.

Well Association: Tank battery signs, Verbal- Field Personnel, Proximity, Flow line (Visible), Flow line (Gradeometer), Flow line (Semi-Submerged)

Grade: Above, At, Below, Unknown

Jand owners Sonny Powell (TR)
Valure/Valeur (zwells) +1 well JOP ID: 10-E-1003 FPN: FDB612 Pit Name: Pit Sheet Complete for each Pit and Estimate Quantities of Material Diameter(ft): LDNR Pit ID: DOP: Latitude: Length (ft.): Longitude: Width (ft.) Depth (ft.): Location Reference: 301 Depth to Sediment Sediment W. of SN 152863 W LMHNDepth1 (ft.): Surface(ft): Outside Berm Sediment W LMHNDepth2 (ft.): Height (ft.): Orientation: Water Sediment (Irregular, Rectangular, Circular) Depth3 (ft.): W LMHNDepth (ft.): Liner Present (Y)/N Construction Type: Construction: (berm above ground sunken, etc) (natural clay, synthetic, etc.): (dirt, dirt and shell, cinderblock, etc) Breaches Present? Y/N/ If Yes describe: Surface Water Sheen? Y/N If Yes describe: Water Present? Y/N If Yes, Water sampling results: Salinity: pH: Norm/Air Monitoring: Describe aquatic life, vegetation, wildlife, or any other significant information:

covered in algae (green) gre trees a other veg. surrounds
bern ; no sheen when disturbed. (Not sampled due of landowner Core Description (include, core name, total depth, recovery, layer depth and access Map of Pit (include location of cores and north arrow hatch areas of soil description): contamination): Units (ft) Core Description-Total Depth Recovery Depth 1 Depth 2 Depth 3 Depth 4 WELL Matrix Description Date Time Sample Sampler

Note: L-Light: 1-3% O/G, M-Medium: >3-20% O/G, H-Heavy: 1-3% O/G; N-None=<1% O/G; W-Wet(sludge) = >40% Moisture.

F									
Pit Shee						Pit N	ame: PIT	7	
Complete	for each Pit	and Estin	nate Qua	antities of Mat	erial		1 11		
Latitude:	,		DOP:	Length (ft.):	40'		Diameter(ft):	LDNR Pit ID:	
Longitude	:			Width (ft.)	10'		Oil		
					<i>/ U</i> .		Depth (ft.):		
Location I	Referencè:			Depth to Sedi	ment	\ \ \	Sediment		
WSIN	of SN	1518	62	Surface(ft):	2,0		Depth1 (ft.):	WLMHN	
	0	,,,,,		Outside Berm		1	Sediment		
				Height (ft.):			Depth2 (ft.):	W LMHN	
Orientation	73	:1N		Water	1.5		Sediment	177 - T 3.6 TT 3.7	
Liner Pres	Rectangular, C	ircular)		Depth (ft.):			Depth3 (ft.):	W LMHN	
II /	ent V/N lgy, synthetic,	ato).		Construction: (dirt.)dirt and s		arblook	Construction	round sunken etc)	
	resent? Y.N		s describ		men, cma	er Drock,	etc) (benin above g	round, sunken/etc)	
Dreucnes 1	resent: 1 My	IJ II	s uescriv	e:					
Surface We	ater Sheen?	If Ye	s describ	e:					
Water Pres	sent?(Y)/N	If Ye	s, Water	sampling result	ts: pH:		Salinity:		
Norm Air I	Monitoring:				10 A				
		W	rdll	m = 1	Sleg	•			
Describe a	quatic life, ve	getation, w	ildlife, or	any other sign	ificant in	formati	on: Mat	sampled	
trees	and i	nisc. 1	1eg.	rany other sign growing	insid	e	14000	I weither	
							raene	sampled description agreemt.	
				·					
	(include loca	-	es and			lude, co	re name, total-depth	recovery, layer-depth and	
1	w hatch areas	of soil		description):			·		
contamina	tion):			Units (ft)	$A \mid B$	C	Cor	e Description	
NN	A			Total	1		1		
\	4			Depth					
	~ -		_	Recovery			1		
			\geq	D // /			 	$\overline{}$	
$C \sim 7$		oded		Depth 1		`			
	2500	~ (P)		Depth 2			12		
	7	trees	\geq	Depth 3		1			
	ית או/י	ooded	3	D-d-4		+->		\	
				Depth 4					
Date	Time	Sample	C/G	Sampl	ler		Matrix L	Description	
		<u>ID</u>		 	· · · · · · · · · · · · · · · · · · ·	 		-	
							-		
									

Note: L-Light: 1-3% O/G, M-Medium: >3-20% O/G, H-Heavy: 1-3% O/G; N-None=<1% O/G; W-Wet(sludge) = >40% Moisture.

FPN: ED3612

Container Sheet: Complet	e for each Container		
Container Name: AS	r-1	(43,3 Circ	cle one: Gauged XEstimated (
Latitude: Do		Oil (ft.): 3 11 (1 of	Solly Solids
31°59′29.0′	VERT, CYLINDE		11.7. 27 1
Longitude: 1. 95° 27'57.0	$b \mid Height (ft): 15'$	Water (ft.):	Other Matrix (ft.):
Location Reference:	Diametersor (l x w)	Construction: (single wall)	Construction Type:
	(fi):	steel poly etc.)	(bolted, welded, etc.)
	10'		
		Condition Adequate XXX	
Features: Open Top; Man-Way	Open; Open, Empty, Gas-	free Rusted or Corroded; Free I	Flowing; Seepage
		Monitoring	
Location: Inside Cont., Breathin		Location: Inside Cont., Breat	
Equipment: LUDLUM (NERN		Equipment: PASSFORT	LEL
Readings: 7 MR/hr Location: Inside Cont., Breathin		Readings: LEL:	
Equipment: PASS PORT		Equipment:	ining Zone, Outside Cont.
Readings: 02 = 20.	<u>D2</u>	Readings:	
			-1) SUGHTLY TO MODERTIES
		-	
KUST	, BOTIOM VALL	res still have han	DCBS ON INC. III
		LD OPEN THE VALV	ES & BMP74 CONTENTS
	THE ASTS.		
Container Sheet: Complete			
Container Name: AST		Circle	e one: Gauged\ Estimated
Latitude: DO	SEPT CY MIN	oil (ft.): 0.8'(11.2)	Oily Solids [1] (15-4)
Longitude: 93° 27' 57.0	Height (ft): 15'	Water (ft.): NONE	Other Matrix (ft.): WKNOWN
Location Reference:	Diameter or (l x w)	Construction: (single wall	Construction Type:
	(ft):	steel) poly etc.)	(bolted, welded, etc.)
	10		
		Condition Adequate (N)	
Features: Open Top; Man-Way C	pen; Open, Empty, Gas-	free; Rusted or Corroded; Free F	lowing; Seepage
		Monitoring	
Location: Inside Cont., Breathin		Location: Inside Cont., Breat	
	vem)	Equipment: PASSPORT	
Readings: 7 WK/nr		Readings: LEL = D	
Location: Inside Cont., Breathin		Location: Inside Cont., Breat	ning Zone, Outside Cont.
Equipment: PASS PORT Readings: 07 = 20		Equipment: Readings:	
Additional Comments: 1 DeA	1892	INIMENT ATTA	-1
NA	OUTSID IN LONIA	INVIEW I AKEA (CON	T-1), SCIGATLY TO HAS HANDLE ON IT, EMPTY THE CONTENTS
IVI DD E	ICH (BL) KUSTEV	1 2017om VALVE	HAS HANDE ON THE
Y055(1	ly someone co	ULD OPEN VALVE O	SINTY THE CONTENTS
OF T	HE TANKS,		

Estimated Quantities of Material	each Contai		Contain	ment No	ame: CONT-1
Latitude: 59' 29.0" DOP	Length & V	67			Diameter (ft):
Longitude: 1.5 93° 27' 57.0"	Inside Berm Height:	~1-2'	Soil Depth 1 (f H N	ř.)	Oil Impact W L M
Location Reference:	Oil Depth (ft.):	Ø'	Soil Depth 2 (fi	t):	Oil Impact W L M H
	Water Depth (ft.):	Ø.	Soil Depth 3 (fi	t.)	Oil Impact W L M H
Orientation: (Irr, Rect.), Cir.)	Is capacity s	ufficient for la		ner? Y K	Ŵ
Is residual oil present? Y (N)	Is containm Y/N	ent adequate?	Containn	ient Sam	pled? Y/N
Are Breeches present? YN If Yes, de	scribe breech > ANIMAL S	location: BURROWS &	N SEE S	ide of	BERM,
1 7 7 1 1 1 1					IN É ON CONTAIMENT
	A	ir Monitoring			
Location: Inside Cont., Breathing Zone, O	utside Cont.		side Cont B		Zone, Outside Cont.
Equipment: LUDLUM (NOR!	utside Cont.	Location: In Equipment:	side Cont B	21 , 1	EL /02
Readings: 7 MR/hr Map of Containment (include location of north arrow): CASING SWAB RIG	utside Cont.	Location: In Equipment: Readings: L	side Cont B PASTOR EL= 0% otion (includ	रा ।	
Readings: 7 MR/hr Map of Containment (include location of	utside Cont.	Location: In Equipment: Readings: L Core Descrip depth and de Units (ft)	side Cont B PASTOR EL= 0% otion (includ	रा ।	EL /02 2 = 20.7%
Equipment: LUDLUM (NOR) Readings: 7 MR/NV Map of Containment (include location of north arrow): GASING, SWAB RIG	utside Cont.	Location: In Equipment: Readings: L Core Descrip depth and de	side Cont B PASTOR EL= O? otion (includescription):	e, core no	EL /02 z = 20.7% ame, total depth, recovery, layer
Equipment: LUDLUM (NOR) Readings: 7 MR/NY Map of Containment (include location of north arrow): CASING, SWAB RIG	utside Cont.	Location: In Equipment: Readings: L Core Descrip depth and de Units (ft) Total Depth Recovery	side Cont B PASTOR EL = O? otion (includ scription): A B	e, core no	EL /07 z = 20.7% ame, total depth, recovery, layer Core Description
Equipment: LUDLUM (NOR) Readings: 7 MR/NY Map of Containment (include location of north arrow): CASING SWAB RIG	cores and	Location: In Equipment: Readings: L Core Descripted and de Units (ft) Total Depth Recovery Depth 1	side Cont B PASTOR EL = 0% otion (includ scription): A B 24 24	e, core no	EL /07 z = 20.7% ame, total depth, recovery, layer Core Description
Equipment: LUDLUM (NOR) Readings: 7 MR/NY Map of Containment (include location of north arrow): CASING, SWAB RIG	cores and	Location: In Equipment: Readings: L Core Descrip depth and de Units (ft) Total Depth Recovery Depth 1 Depth 2	side Cont B PASTOR EL = OP oftion (includ scription): A B C 24 15 15	c, core no	EL /07 z = 20.7% ame, total depth, recovery, layer Core Description
Readings: 7 MR/hY Map of Containment (include location of north arrow): CASING SWAB RIG PARAGE TRUCK ANIMAL PURPLEW WELL	cores and	Location: In Equipment: Readings: L Core Descrip depth and de Units (ft) Total Depth Recovery Depth 1 Depth 2 Depth 3	side Cont B PASTOR EL = OP otion (includ scription): A B OP OP OP OP OP OP OP OP OP O	c, core no	EL /02 z = 20.7% ame, total depth, recovery, layer Core Description
Readings: 7 MR/hY Map of Containment (include location of north arrow): CASING SWAB RIG PARAGE TRUCK ANIMAL PURPLEW WELL	utside Cont.	Location: In Equipment: Readings: L Core Descrip depth and de Units (ft) Total Depth Recovery Depth 1 Depth 2	side Cont B PASTOR EL = OP oftion (includ scription): A B C 24 15 15	c, core no	EL /07 z = 20.7% ame, total depth, recovery, layer Core Description
Readings: 7 M R/NY Map of Containment (include location of north arrow): CASING, SWAB RIGHT TRUCK PARGE TRUCK ANIMAL RURKOW Date Time Sample ID	cores and	Location: In Equipment: Readings: L Core Descrip depth and de Units (ft) Total Depth Recovery Depth 1 Depth 2 Depth 3	side Cont B PASTOR EL = OP otion (includ scription): A B 1 20 1 50	C 24 1 17"	EL /07 2 = 20.7% ame, total depth, recovery, layer Core Description " Leaf debrist Soil Sandy day Sediment brown Sandy day Matrix Description
Equipment: LUDLUM NOR! Readings: 7 MR/NY Map of Containment (include location of north arrow): CASING, SWAB RIG SPARGE TRUCK ANIMAL RURKOW WELL WITH P	cores and	Location: In Equipment: Readings: L Core Descrip depth and de Units (ft) Total Depth Recovery Depth 1 Depth 2 Depth 3 Depth 4	side Cont B PASTOR EL = OP otion (includ scription): A B 1 20 1 50	C 24 1 17"	EL /02 2 = 20.7% ame, total depth, recovery, layer Core Description " Leaf debrist Soil Savoly day Sediment brown Savoly day

FPN: <u>CO3612</u>

	"Liquid"	Sludge	Sludge	Sludge/Soil	Soil	Soil
Name	Oil & Oily Solids (bbl)	Light (1-3% O/G) (yd³)	Medium (>3-20% O/G) (yd³)	Heavy (>20% O/G) (yd³)	Light (1-3% O/G) (yd³)	Medium (>3-20% O/G) (yd³)
ASTI_	17443	34				
ASTI	135.6					
AST2	11.2				·	
ASTZ	15.4					
TOTAL	(205.5					
(OWT					Cul	
					•	
						,
	•					
					,	:
		:				
Totals		· · · · · · · · · · · · · · · · · · ·			Cal	

FPN: E \$ 3612

Facility Name: THREAT STATUS TABLE (Revised)
TRANS-GULF PETROLEUM CORP. VARNER

JOP ID: 16-E-1853
Date of Survey: 2/18/2003

Criteria (1)	Evaluated Specifications	121	Possible Points	Points	
Volme (Liquid)	1 Point per 5.8 bbl. (41 points if greater than 238 bbl). (2)	2855561 / 5.8 = 35			S 10
Volume (Contaminated Sludge) (3)	1 Point per 60 yd³ of sludge (Pits with surface water sheening during sediment agitation, but no visual evidence of oil in sediments).	yd³ / 60 =	Not to	20.	י אי על
Shidge) "	1 Point per 12 yd³ of sludge (Pits with moderate surface water sheening during sediment agitation and visual oil contamination in sediments).	yd³ / 12 =	exceed 41 points (additive	255	160
	1 Point per 4 yd ³ of sludge (Pits with floating oil and heavy oil saturation of bottom sediments).	yd³ / 12 =	by volume, criteria).	2/	
Volume	1 point per 46 yd³ of soil (Impacted soils with light oil contamination).	yd3 / 46 = PS		1-1,1	
(Contaminated Soil) ⁽³⁾	1 point per 9 yd ³ of soil (Impacted soils with heavy oil contamination).	yd³/9 =		·	
	Isolated compound > 5,000 feet in distance.		0		
Proximity to Waterways ⁽⁴⁾	Points = [12 - (distance in ft/500 ft)] round to nearest whole number.	1-10	10	V	
	Over water.		10	, 0	
	LDNR assigned value of 1 = 8 points	wells x 8	Not to		
LDNR Well	LDNR assigned value of 2= 6 points	wells x 6 =	exceed 16		
Assigned Value	LDNR assigned value of 3 = 4 points	/_wells x 4 =	poins (additive	8	v
	LDNR assigned value of 4 = 2 points	> wells x 2 =	by wells).		
	No rust, weeps, leaks, or cracks.		0		
	Rusty, pitted, corroded, or cracked.	5			
	Top open or holed-Potential overflow from precipitation.	10	5	/	
Container	Weeping, seeping or holed (including seepage through pit berm walls).		15		
Condition	Hatches/containers welded or locked, or manways removed,		0		
Potential for	Hatches/containers accessible, proximal to roads or transportation.		1-7	9 , .	<u></u>
Dumping	Containers open, pits, and proximal to roads or transportation.	8			
	Security features or fences present, not proximal to persons or wildlife.		Ü		
Accessability to Wildlife and	Limited security features, accessible to persons or wildlife.	1-9			
Persons	Within 5,000 feet of residential area and open pits or containment with o	10			
	Total =		100		∴ Cù
	Priority based on points: Low Threat (LT) 0-40 Substantial	Threat (ST) 41-100		5/20	مل عب

Qualitative interpretation prepared by Contractor, based on seven criteria deemed most significant in evaluating potential threat.

A volume of 238 bil scores the maximum number of points based on the definition of a major inland discharge being 10,000 gailons (238 bbl) [40 CFR 300].

For the purpose of estimating threat to the environment from oil in soils and/or sludge, five scenarios, which are most commonly encountered in field operations, are presented. The basis of the values presented for each scenario were derived from the following calculation using an average density, moisture concentration and oil and grease concentration of

contaminated soils and sludge from historical facility assessment and analytical data:

(Density of material (bs/yd³) X Total volume of material (yd³) X [(100-Percent moisture (%)/100] X [Percent Oil and grease dry weight (%)/100]) / Density of Crude oil (1432.7 lbs/yd³) = Volume of oil and grease (yd²)

For the purpose of threat evaluation, a waterway is defined as any USGS identified perennial water body.

The evaluation of container conditions should include observations of any container on-site including pits, but should be limited to those containers which contain product.

Key:

bbl = Barrels Ft. = Feet (US) % = Percent

lbs. = Pounds

USGS = United States Geological Survey yd3 = Cubic yards

5 of 15

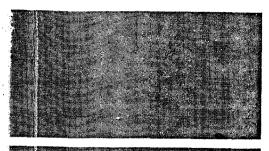
EPA No.: 16-E-1003 FPN: E03612

APPENDIX 5

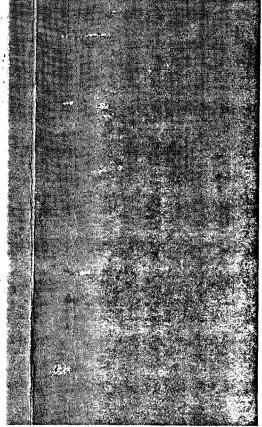
LOGBOOK DOCUMENTATION

16E1003.pdf Contract: DACW5602G1001

Task No.: 003







Job Number 00/702. CU.03.3608-3624

OPA for 17 sites in NW

LOUISIANA

"129t QUArter"03"

E & E Job Number	001702. CM. 03	
Telephone Code Number	17022803	
Site Name	OPA 17 SITES IN NORTHWEST LA	1
	FIRST QUARTER 03	
City/State	A	
TDD		
PAN		
SSID		
	2 17 2003	
Start / Finish Date	2/11/2003 /	
	<i>j 1</i>	,
	Book of	

E & E Emergency Response Center: (716) 684-8940

E & E Corporate Center: (716) 684-8060

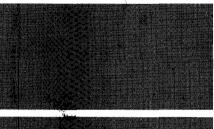
MEDTOX Hotline: (501) 370-8263

E & E Safety Director (Home): (716) 655-1260

DZ/18/ZD\$3 \$6170Z.CVQ3 0600 PAUL D. JAMES (PS), PATRICK JOHNSON (PAS) & JUSTIN FARRELL (JF) MEET FOR BREAKFAST 0605- HEALTH & SAFETY MEETING TOPICS: SLIP, TRIP FALL, HOSPITAL ROUTE, TOP 3 CAUSES OF DEATH ON A JOB SITE WAST YEAR REPORTED BY OSHA. 0700 - ARRIVED AT WALMART FOR SUPPLIES 0725 - ON POUTE TO SABINE PARISH TO E \$3615 MEETAL \$ EØ3616, D900 - CREW MET WITH LDNR REP FOR SABINE FARISH (MR. FRANK MOORE) IN MANY. 0915 - ON ROUTE TO E 03615 WITH MR. MOORE. 0950 - REACHED GATE OF FACILITY 43-E-1001 (E03615) 12:10 - FINIGH ASSESMENT OF 43-E-1001 ON ROUTS TO 43-5-1002 12:15 ARIZIVE AT ACCESS ROAD AT USITI, FACILITY IS ON ACCESS ROAD EAST OF USIT! JUST NORTH 500 ft of HOUSTON SPUR ROAD INTERSECTION. 1400 FINISH ASSESSMENT ON 43-E-1002, ON ROTE TO DESOTO PARISH TO MEET WITH L'DNIR R.A. "BUDDY BUFKIN (318) 796-3724 ARRIVE AT FACILITY E \$3612. MR. 1508 BUFKIN SHOW CREW AROUND THE SITE, Mr Bulkin depart site, Sield ared 1520 Continue site assesment, see facility assessment sheet for details Field team depart site for hotel 1810

EP 3015 ; ED 3016

EØ3612; EØ3613; EØ3614; EØ3621 05.03.03 1003 OPA 0600 EtE Beeson Barker and Borderlow meet to conduct workplan/safety meeting. DSOD ETE arrive of FRA3612 Carl inform Manh resident of actuation. Resident informe ETE that people had put PCB transform oil in take and were stopped by PBI preventy. 1000 FOF depart FPN 3612 after collection Samples from ASTI+2 are Con+1. Ett webs to collect samples for the 2 Pits because with 1045 EtE arrive at FPN 3613 one FPN 3614. 1430 Et E depont FPN 7613 al FPN 3614 ofte collection 200 Samples for 2PITS, ICONT, 2 MMD and 10:1 inpacted Area R ED3Kis and I CONT of FPN 3614. 1500 Ett deliged in traffic due to traftiz accident on I-49. 1618 EtE aut FPN3621 to collect MMD Souple in ely pit behind ConTI (MMD21) 1700 ETE depart FPN3(21 with M21-W are M21 A + B poil parples -17:45 ETE arrive of putel. Begin packing omply for lab, al loading equipment for demobilization Amenda Bordelon scheduled to demob egupment and restal truch/toails to Baton Rouse on 5.4.03 D. Bees and S. Borken to demobrate and a 5.4.03







Job Number 061702. CU 03 1003 OPA 17 sites

E & E Job Number	001702	2. Cu	23	
Telephone Code Number				
Site Name	1003	OPA	17 sites	
City/State				
only/olute ,				
TDD.				
SSID				
Start / Finish Date_		/_		
			Book of	

E & E Emergency Response Center: (716) 684-8940

E & E Corporate Center: (716) 684-8060

MEDTOX Hotline: (501) 370-8263

E & E Safety Director (Home): (716) 655-1260

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	SampleID	Derf	Time	Med	de	Sampler	Coc	Commonts
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EPA No.: 16-E-1003 FPN: E03612

APPENDIX 6

ACCESS AGREEMENTS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003



ecology and environment, inc.

International Specialists in the Environment

11550 NEWCASTLE AVENUE, BATON ROUGE, LOUISIANA 70816 TEL: (225)298-5080, FAX: (225)298-5081

March 7, 2003

Anthony Valure et al. 261 Valure Lane Mansfield, LA 71052

Re: Access to Property

Mr. Valure:

The United States Army Corps of Engineers has contracted Ecology and Environment, Inc. to conduct assessments of abandoned oil and gas production facilities throughout Northwest Louisiana. These assessments are being conducted through a cooperative effort with the United States Environmental Protection Agency, the United States Coast Guard, and the Louisiana Department of Natural Resources. We are requesting your consent to access property in Section 034 of Township 12N and Range 11W on which a portion of the TRANS-GULF PETROLEUM CORP - VARNER facility components are located and were last operated by TRANS-GULF PETROLEUM CORP. Please read and sign the attached form (Consent for Access to Property). If you have any questions, do not hesitate to call either myself at (225) 298-5080, or Mike Keen at (318) 869-4634.

For your convenience, enclosed is a self addressed stamped envelope for return of the form. Thank you in advance for your cooperation.

Sincerely

Justin Farrell

Ecology and Environment, Inc.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY **REGION 6** 1445 ROSS AVENUE, SUITE 1200 🖟

DALLAS, TX 75202-2733

Shreveport Area Office 3003 Knight St., Suite 122 Shreveport, LA 71105

CONSENT FOR ACCESS TO PROPERTY

NAME: Trans-Gulf Petroleum Corp - Varner LOCATION OF PROPERTY: Section 034, Township 12N, Range 11W. SN 152863 and SN 194686.

I consent for the officers, employees, and authorized representatives of the United States Environmental Protection Agency (EPA) to enter and have continued access to my property for the following purposes:

- The taking of such soil, water, air samples. Samples from tanks, pits, and equipment as may be necessary;
- Other actions related to the investigation of surface or subsurface soils:
- The taking of a response action necessary to mitigate any threat to human health and the environment including, but not limited to, plugging wells, removing tanks, tank contents and piping, removing contents of any pits and closing such pits. And removing any oil contaminated soils.

I realize that these actions by EPA are undertaken pursuant to its response and enforcement responsibilities under the Clean Water Act (CWA), 33 U.S.C. § 1321, ET SEQ., as amended by the oil pollution act of 1990 (OPA).

As owner of the property or as an individual with authority to grant access, this written permission is given by me voluntarily with knowledge of my right to refuse access and without threats or promises of any kind.

Date:	Owner Signature:
Date:	Renter Signature:



3 GOER: COMPLETE THIS SECTION	GOMPLETE FOR GREGHOR ON DELIGIBITY
■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you.	A. Signature Agent Addressee B. Received by (Printed Name) / C. Date of Delivery
Attach this card to the back of the mailplece, or on the front if space permits. 1. Article Addressed to: MAR 1 7 2003 Anthony Valure Eac EIVED 261 Valure Lane	D. Is delivery address different from Item 1? Yes If YES, enter delivery address below: No MAR 1 2003 RECEIVED
Mansfield, LA 71052 16-E-1003	3. Service Type D Certified Mail Express Mail Registered Return Receipt for Merchandise Insured Mail C.O.D. Restricted Delivery? (Extra Fee) Yes
2. Article Number 7002 24	
PS Form 3811, August 2001. Domestic Ret	urn Receipt 102598-02-W-1646



ecology and environment, inc.

International Specialists in the Environment

11550 NEWCASTLE AVENUE, BATON ROUGE, LOUISIANA 70816 TEL: (225)298-5080, FAX: (225)298-5081

March 7, 2003

Donald W. and Nancy Myers Powell 4630 Highway 510 Mansfield, LA 71052

Re:

Access to Property

Mr. and Mrs. Powell:

The United States Army Corps of Engineers has contracted Ecology and Environment, Inc. to conduct assessments of abandoned oil and gas production facilities throughout Northwest Louisiana. These assessments are being conducted through a cooperative effort with the United States Environmental Protection Agency, the United States Coast Guard, and the Louisiana Department of Natural Resources. We are requesting your consent to access property in Section 034 of Township 12N and Range 11W on which a portion of the TRANS-GULF PETROLEUM CORP - VARNER facility components are located and were last operated by TRANS-GULF PETROLEUM CORP. Please read and sign the attached form (Consent for Access to Property). If you have any questions, do not hesitate to call either myself at (225) 298-5080, or Mike Keen at (318) 869-4634.

For your convenience, enclosed is a self addressed stamped envelope for return of the form. Thank you in advance for your cooperation.

Sincerely.

Justin Farrell

Ecology and Environment, Inc.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY **REGION 6** 1445 ROSS AVENUE, SUITE 1200

DALLAS, TX 75202-2733

Shreveport Area Office 3003 Knight St., Suite 122 Shreveport, LA 71105

CONSENT FOR ACCESS TO PROPERTY

NAME: Trans-Gulf Petroleum Corp - Varner LOCATION OF PROPERTY: Section 034, Township 12N, Range 11W. SN 152795

I consent for the officers, employees, and authorized representatives of the United States Environmental Protection Agency (EPA) to enter and have continued access to my property for the following purposes:

- The taking of such soil, water, air samples. Samples from tanks, pits, and equipment as may be necessary:
- Other actions related to the investigation of surface or subsurface soils:
- The taking of a response action necessary to mitigate any threat to human health and the environment including, but not limited to, plugging wells, removing tanks, tank contents and piping, removing contents of any pits and closing such pits. And removing any oil contaminated soils.

I realize that these actions by EPA are undertaken pursuant to its response and enforcement responsibilities under the Clean Water Act (CWA), 33 U.S.C. § 1321, ET SEQ., as amended by the oil pollution act of 1990 (OPA).

As owner of the property or as an individual with authority to grant access, this written permission is given by me voluntarily with knowledge of my right to refuse access and without threats or promises of any kind.

Date:	Owner Signature:
Date:	Renter Signature:





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ENDER: COMPLETE PRODUCT	(ASIN y	10 P C 2 CO 1 CH 1 C 1 C 1 C 1 C 2 (N) 2 C
Complete items 1, 2, and 3. Also item 4 if Restricted Delivery is de- Print your name and address on t	sired.	A. Signaturer X / Coulour Rul Agent Addresses
so that we can return the card to Attach this card to the back of the or on the front if space permits.		B. Received by (Printed Name) C. Date of Delivery
Article Addressed to:		D. Is delivery address different from item 1? Yes
		If YES, enter delivery address below: ☐ No
Donald W. and Nancy M	yers Powell	If YES, enter delivery address below: ☐ No MAR 2 0 2003
Donald W. and Nancy M 4630 Highway 510	yers Powell	
Donald W. and Nancy M	yers Powell	MAR 2 0 2003
Donald W. and Nancy M 4630 Highway 510	* 	MAR 2 D 2003 3. Service Type CEIVED Certified Mail Registered Return Receipt for Merchandles



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6 1445 ROSS AVENUE, SUITE 1200 DALLAS, TX 75202-2733

RECEIVED

Shreveport Area Office 3003 Knight St., Suite 122 Shreveport, LA 71105

CONSENT FOR ACCESS TO PROPERTY

NAME: Trans-Gulf Petroleum Corp - Varner
LOCATION OF PROPERTY: Section 034, Township 12N, Range 11W.
SN 152795

I consent for the officers, employees, and authorized representatives of the United States Environmental Protection Agency (EPA) to enter and have continued access to my property for the following purposes:

- The taking of such soil, water, air samples. Samples from tanks, pits, and equipment as may be necessary;
- Other actions related to the investigation of surface or subsurface soils;
- The taking of a response action necessary to mitigate any threat to human health and the environment including, but not limited to, plugging wells, removing tanks, tank contents and piping, removing contents of any pits and closing such pits. And removing any oil contaminated soils.

I realize that these actions by EPA are undertaken pursuant to its response and enforcement responsibilities under the Clean Water Act (CWA), 33 U.S.C. § 1321, ET SEQ., as amended by the oil pollution act of 1990 (OPA).

As owner of the property or as an individual with authority to grant access, this written permission is given by me voluntarily with knowledge of my right to refuse access and without threats or promises of any kind.

Date:_	3/20/03	Owner Signature:	Doll	W.	Youl	
	/ /	·				
Date:_		Renter Signature:_		· · · · · · · · · · · · · · · · · · ·		

Justin E. Farrell Ecology and Environment, Inc.

Record of Communication

Conversation with:		Date:	3	20 2003	
Facility: 16-E-10	003		(Mo)	(Day) (Year)	
	ny Valure				
	Landowner	Time:		1045	AM / PM
	alure Lane	[x]	Origin	nator Placed Call	
	ield, LA 71052	[]	_	nator Received C	
	872-2236	LJ	0115111	iaioi itoooiyoa e	
(Area)	(Number)				
Subject: Follow-	up regarding access to a portion of the Trans-Gulf Petroleum	- Varner	facility		
Discussion:					
E&E Farrell	called regarding access letter that had been i	receive	d and	signed for b	y Mr.
Valure. Yes	he had received the letter, however he had	a few q	uestio	ns that he w	vanted
to clarify before	ore remitting the letter. Mainly the question	is conc	erned	the length o	of access
to the propert	y. He did not like that fact the the letter do	es not s	state a	timeframe i	for
access. I refe	erred him to USACE Keen regarding this ma	atter an	d sugg	gested that t	he COE
reconsider the	e longevity of the timeframe. He stated that	t he wo	uld lik	cely have hi	s laywer
	that he would likely NOT be signing the ac			· · · · · · · · · · · · · · · · · · ·	
	permission to access his property (given pro				
	ampling and any removal actions (such as p	 			
<u>vontavving</u> se	unipring unit unit reme (un uniter (curen uniter)	**********	5 01 011		<u></u>
11/	Value a suite a stand L		/	1.1.7	
20(7,	Valure owns property u 863 \$5N 194686	pon	<u> W F</u>	uca,	
SN 152	863 ZN 194686	are	10	cated.	
				-	
Follow-Up Action	on: Call Mr. Valure in advance of sampling operation	ns to info	orm him	of our presence	e.
•	mobilization, determine based on analytical potenti				
access is desire		,			
Originator's Signat	ture:				
<i>Ç G</i>	1 - grovers				

Justin E. Farrell
Ecology and Environment, Inc.

Record of Communication

Conversa	tion with:	р	ate:	3 28 2003 (Mo) (Day) (Year)
Facility:	16e1003			
Name:	Donald W Powell			11111
Association	on: Landowner	Т	ime:_	1445 AM/PM
Address:	4630 Highway 510			Originator Placed Call
	Mansfield LA 71052]	Originator Received Call
Phone:	318 932-3324			_
	(Area) (Number)			
Subject:	Follow up to sent access agreement			
Discussio	n:			·
E&E F	arrell placed call to Mr Powe	ll, one of two landowne	rs fo	r the Trans-Gulf
Petrole	eum Corp - Varner facility. M	Ir Powell owns the land	upoi	n which the tank battery
	I 152795. He stated that they			
	hey had received it. Mr Powe			
	s in the mail yet. He said tha			
	ck. When asked if he had qu			
	on previous conversations wit			
	on provious conversations with	in my soil alla 1351 (it ba	aay	Buikin on site.
		MARKET CONTRACTOR OF THE CONTR		
				
Follow-U	Jp Action:			
Inform N	Ir and Mrs Powell when the sampling	gactivites begin.		
				>
Originato	r's Signature:			

EPA No.: 16-E-1003 FPN: E03612

APPENDIX 7

LANDOWNER RECORDS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

6E1003

02/21/03

AS SSMENT LISTIG

PAGE NO: 1

FROM THE OFFICE OF YOUR ASSESSOR
IN DESOTO PARISH
JIMMY STEPHENS
(318) 872-3610

NAME: POWELL, DONALD W. &

NANCY MYERS POWELL

4630 HWY 510

MANSFIELD, LA. 71052

ASSESSMENT #: 05 00877415

LOCATION 00

ASSESSMENT ITEMS

ITEM	CLASS	ASSESSED VALUE	HOMESTEAD EXEMPTION	ACRES /UNITS	ACRES EXEMPT	TAX CODES
1	AGRI. CLASS 1	930	0	25	0	12280506
3	AGRI. CLASS 3	1,058	0	46	0	12280506
80	LEVEE ACREAGE	2,030	0	71	0	5060
	ITEM TOTALS >>>	1,988	0	71	0	

DESCRIPTION IS AS FOLLOWS

THE SOUTH 1/2 OF THE FOLLOWING: ALL THATA PART OF THE W 1/2 OF SEC 26 T12 R11, LYING EAST OF RED BAYOU AND SOUTH OF A LINE DRAWN EAST & WEST THRU A PT 1542.50 FT SOUTH OF A PT ON THE SOUTH BANK OF GARCIA BAYOU WHERE THE LINE RUNNING NORTH AND SOUTH BETWEEN THE SE OF SW & SW SW OF SEC 23, T12 R11, CROSSES SAID BAYOU AND NORTH OF A LINE DRAWN EAST & WEST THRU A PT 4627.50 FT SOUTH OF THE ABOVE DESC PT ON GARCIA BAYOU, LESS AND EXCEPT 16 ACRES OF THE S/S OF SD TRACT EMBRACED BETWEEN PARALLEL LINES RUNNING EAST & WEST, THE S/L OF 16 ACRE TRACT BEING THE S/L OF LARGER TRACT ABOVE DESC. CONT. 71 ACRES MORE OR LESS. LESS 2 TRACTS, FOR DESC OF LESS TRACTS SEE DEED. (737-676).

NEW 1997 FR: HONKER PLANTATION, INC. VALUE:\$44,000. BY: B.W.
1997 NOTE: NOT SURE ABOUT AMOUNT OF ACRES, & DRAWING IN PLAT BOOK.
WILL LEAVE AS IS UNTIL MR. POWELL TELLS US SOMETHING DIFFERENT. B.W.
[[261211000 009

02/21/03

PAGE NO: 1

FROM THE OFFICE OF YOUR ASSESSOR IN DESOTO PARISH JIMMY STEPHENS (318) 872-3610

NAME: VALURE, ANTHONY ET UX

261 VALURE LANE

MANSFIELD, LA. 71052 ASSESSMENT #: 05 00893348

LOCATION 00

ASSESSMENT ITEMS

ITEM	CLASS	ASSESSED VALUE	HOMESTEAD EXEMPTION	ACRES /UNITS	ACRES EXEMPT	TAX CODES
2	AGRI. CLASS 2	6,912	3,510	256	130	12280506
11	MISC. LAND	320	0	40	0	12280506
80	LEVEE ACREAGE	6,912	0	256	0	5060
81	LEVEE IMP	590	0	0	0	50
	ITEM TOTALS >>>	7,232	3,510	296	130	

DESCRIPTION IS AS FOLLOWS

LOTS 1 & 2 OF SEC 34; NW NW; FRAC SW NW & LOTS 3, 4, & 5 OF SEC 35; (380-405) T12 R11; LEVEE DESC: 256A OF LAND IN SECS 34, 35, & 26 T12 R11. (649-773)(655-501).(673-488)(673-495)(677-801).

261211

[[341211000 001

002 [[351211000

1994- NOTE: ADD UNIT 3 & 4 FROM LEVEE.

NEW 1993, FR: FARM CREDIT BANK TEXAS, VALUE: \$63,094.30 & OVC.

USE VALUE FORM SIGNED 2/26/93*******H/E SIGNED 2/26/93 JOINS HIS

H/E UNDER # 05-00893351

Search Information:

Searched terms: "powell, d, Coushatta, LA" Search took 0.12 seconds

Powell, Donnie

4630 Hwy 510th Coushatta, LA 71019 (318) 932-3324

Find out more about Donnie Powell
Did you go to school with Donnie Powell?
Search Public Records



WhitePages.com - Find People

Mansfield, LA 71052 (318) 871-8701

Find out more about Anthony E Valure
Did you go to school with Anthony E Valure?
Search Public Records

Valure, Anthony E

261 Valure Lane Mansfield, LA 71052 (318) 872-2236

Find out more about Anthony E Valure
Did you go to school with Anthony E Valure?
Search Public Records

EPA No.: 16-E-1003 FPN: E03612

APPENDIX 8

MINERAL RIGHTS RECORDS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

OIL, GAS AND MINERAL LEASE

	THIS ACREEMENT made this 26	6thd	lay of	April			between
	Robert G. Varner, husband of Jan a resident of Natchitoches Parish,	nie Ruth Dean, Louisiana.	address	P. 0.	Box 969,	JUN 29 12 17 PH.	Sinomiving & nich
	lessor (whether one or more), and David E. lessee, WITNESSETH: 1. Lessor in consideration of Ten A				Delle		} C3
•	in hand paid, of the royalties herein provided, as lets exclusively unto Lessee for the purposes of a oil, gas and all other minerals, laying pipe lines, on to produce, save, take care of, treat, transport structing roads and bridges, and building houses servitudes and privileges which may be necessar	nd of the agreemen investigating, explor building tanks, poy and own said prod for its employees, a y, useful or conveni	t of Lessee ing, prosper stations lucts and ingeneent to or in	herein cecting, dr. cting, dr. ctelepho for dredgeral, for a n connec	ontained, he illing and mi ne lines, and ging and mall appliances, tion with an	reby grants, le ning for and p other structur aintaining can structures, eq y such operat	roducing res there- als, con- uipment.
	ducted by Lessee thereon, or on any adjacent la Louisiana, to-wit:	nds, the following d	lescribed la	and in	<u>DeSoto</u>		_Parish,
	Lots 1 and 2, Section 34; Northwest Quarter of Northwest Quarter of Northwest Quarter of Northwest Quarter of Northwest Quarter and Lots 3, 4, and 5 of Section Lot 4 and 16 acres off the South single Section 592, of the Conveyance Records as all of Lot 5 and the South 7 characteristics.	on 35; ide of Lot 3 of s of DeSoto Par	Jos. Ki	ng Par isiana	tition as	per Book 5	, page
	All in Township 12 North, Range 11 Parish, Louisiana.	West, containi	ng 363.9	6 acre	s, more o	r less, DeS	Soto
•	2. Subject to the other provisions herein (called "primary term") and as long thereafter a under or from land pooled therewith; or (2) it is (a) It is the intention of the parties that servitudes affecting the lands herein described a	calculating the ren cres, whether it act contained, this leas as (1) oil, gas, sulp is maintained in for this lease shall also as the same may rev	tal paymen ually comp e shall be hur or othe ce in any o extend and ert to Lesse	its hereur rises mor for a per er minera other mar d apply t or, his he	nder provide re or less.Fi- eriod of Kan il is produce mer herein p to all outstar irs or assign	d for, said land years from to d from said later orovided. ading mineral s, from time to	d is esti- this date and here- rights or time.
	3. The royalties to be paid by Lessee are liquid form by ordinary production methods, or at the wells or to the credit of Lessor in the pipe to bear its proportion of any expenses for treating chase any royalty oil or other liquid hydrocarbo field where produced on the date of purchase; (from said land and sold or used off the premises value at the well of one-eighth of the gas so sold eighth of the amount realized from such sale; su cription whatsoever, as may be disposed of for or in order to recover oil or other liquid hydrocarbo or used either on or off the premises within the marketed, one-eighth, either in kind or value at shall be one dollar (\$1.00) per long ton.	ne-eighth of that pro- e line to which the very general to make it is consinguity in the possession, (b) on gas, including or for the extraction of the gas, casinghead no consideration to arbons, or returned meaning of this particular to the part	oduced and wells may l marketable paying th g casingher n of gasoli that on gas gas, reside Lessee, eit to the ground	I saved for connect as crude as crude as crude as connect as sold at ue gas, controlled the cont	rom said land cted; Lessor; ; Lessee may t price there r other gased her products the wells the or gas of an ugh unavoid l not be dee c) on all oth	d, same to be a sinterest in eit from time to efor prevailing the refrom, the royalty shall y other naturable waste or med to have the minerals m	delivered ther case time pur- g for the produced e market I be one- e or des- leakage, peen sold ined and
	 If operations for drilling or mining are one year from this date, this lease shall terminate 	e as to both parties,	unless on o	or before	one year from	n this date Le	
	pay or tender to the Lessor a rental of Three	Hundred and Si	xty-Thre	ee and		RS (\$ 396.9)	36
	which shall cover the privilege of deferring commanner and upon like payments or tenders, annu successive periods of the same number of month	ually, the commence	ment of sa	uid opera	riod of twelv itions may b	re (12) month e further def	s. In like erred for
	Lessor or to the credit of Lessor in City Ba						Bank
	at Natchitoches, Louisiana, whi and Lessor's successors and assigns. If such bank bank, or for any reason fail or refuse to accept redeliver to Lessee a recordable instrument, making charge is a liability of the Lessor. The payment delivered to said bank of Lessor, on or before drilled hereunder in search of oil, gas or any oth execute and deliver to Lessor or to the depositor or portions of the above described premises an of all obligations as to the acreage surrendered portion that the acreage covered hereby is reduct to easements for rights of way necessary or converting the such production is shut in by reason of force may pipeline outlet in the field, this lease shall not to	k (or any successor ental, Lessee shall no ng provision for and or tender of rental the rental paying duer mineral shall be y above named or put thereby surrended, and thereafter the ced by said release of this lease either aicure or the lack either aicure or the lack either	bank) sha of be held in ther methor may be may late. The di- determine lace of reconstructions or releases, operations of on land with before or a fither of a no	Il fail, liq in default ad of pays ade by c lepth of t d solely l ord a rele as to sucl yable her but all la on the lau th which after the narket at	uidate, or bet until thirty ment, or tend heck or draithe hole to very by Lessee. It is portion or reunder shall ands so release of the lease perpendicular of the lease perpendicular of the well or the tend or the well or the tend or the well or the tend or the well or the tend to the tend or tend or the tend or tend	e succeeded by days after Le der, and any de t of Lessee, re which any wel essee may at es covering and portions and be be reduced in sed shall remain y it. It is primary wells or of an	y another ssor shall epository nailed or l may be any time relieved the pro- in subject y portion term, all available
	production were actually being obtained on th	e premises within	the meanir	ng of pa	ragraph 2 h	ereof, and, d	uring the

month of January of each year immediately succeeding any year in which a shut-in period occurred when all such production was so shut in, Lessee shall pay or tender, by check or draft of Lessee, to the royalty owners or to the royalty owners credit in any depository bank named in this lease, as royalty, one-twelfth (1/12) of the amount of the delay rental provided for in paragraph 4 hereof for each full calendar month in the preceding calendar year that this lease was continued in force solely and exclusively by reason of the foregoing provisions of this paragraph. The owners of the royalty as of the date of such payment shall be entitled thereto in proportion to their ownership of the royalty. The provisions of this paragraph shall be recurring at all times during the life of this lease. Nothing in this paragraph contained shall abridge the right of Lessee to otherwise maintain this lease in force and effect under its other provisions, and for any part of a shut-in period that this lease is otherwise being maintained in force and effect no shut-in royalty shall be due.

6. This lease will continue in full force and effect within or beyond the primary term as long as any mineral is produced from said land hereunder or from land pooled therewith. If within the primary term and prior to discovery of oil, gas, sulphur or other mineral on said land or on land pooled therewith, Lessee should drill a dry hole or holes thereon or if after discovery of oil, gas, sulphur or other mineral, the production thereof should cease from any cause, this lease shall not terminate if Lessee commences or resumes the payment or tender of rentals or commences drilling operations or reworking operations on or before the rental paying date next ensuing after the expiration of ninety days from date of completion of such dry hole or cessation of production. If at any time subsequent to ninety days prior to the beginning of the last year of the primary term Lessee should drill a dry hole thereon or on land pooled therewith, or production previously secularly should cease from any cause, no rental payment or operations are necessary in order to keep the lease in force during remainder of the primary term. If such dry hole or holes be completed or abandoned or such production cease within than ninety days before the end of the primary term, this lease shall continue in force and effect for ninety days into the completion of production. If at the expiration of the primary term of the primary t completion or abandonment or cessation of production. If at the expiration of the primary term or at the expiration of the ninety day period provided for in the preceding sentence, oil, gas, sulphur or other mineral is not being produced on said land or on land pooled therewith but Lessee is then engaged in drilling operations or reworking operations thereon, or if production previously secured should cease from any cause after the expiration of the primary term, this lease shall remain in force so long thereafter as Lessee either (a) is engaged in drilling operations or reworking operations with no cessation between operations or between such cessation of production and additional operations of more than ninety consecutive days; or (b) is producing oil, gas, sulphur or other mineral from said land hereunder or from land pooled therewith. If sulphur be encountered on said premises or on land pooled therewith this lease shall continue in force and effect so long as Lessee is engaged with due diligence in exploration for and/or erecting a plant for the production of sulphur and thereafter, subject to the foregoing provisions hereof, so long as oil, gas, sulphur or other mineral is produced from said land hereunder or from land pooled therewith.

7. Lessee is hereby granted the right as to all or any part of the land described herein, without Lessor's joinder, to combine, pool, or unitize the acreage royalty or mineral interest covered by this lease, or any portion thereof, with any other land, lease or leases, royalty or mineral interests in or under any other tract or tracts of land in the vicinity thereof, whether owned by Lessee or some other person, or corporation so as to create, by the combination of such lands and leases, one or more operating units, provided that no one operating unit shall, in the case of gas, including condensate, embrace more than six hundred forty (640) acres, and in the case of oil, including casinghead gas, embrace more than forty (40) acres; and provided further, however, that if any spacing or other rules and regulations of the State or Federal Commission. Agency, or regulatory body having or claiming jurisdiction has heretofore or shall at any time hereafter prescribe a mission, Agency, or regulatory body having or claiming jurisdiction has heretofore or shall at any time hereafter prescribe a drilling or operating unit or spacing rule in the case of gas, including condensate, greater than six hundred forty (640) acres, or in the case of oil or casinghead gas greater than forty (40) acres, then the unit or units herein contemplated may have, or may be redesigned so as to have, as the case may be, the same surface content as, but not more than, the unit or the acreage in the spacing rule so prescribed. However, it is further specifically understood and agreed, anything herein to the contrary notwithstanding, that the Lessee shall have the right to, and the benefit of an acreage tolerance of ten per cent in excess of any drilling or operating unit authorized herein. In the event such operating unit or units is/are so created becsee, Lessor agrees to accept and shall receive out of the production or the proceeds from the production from such described by the production of the productio Lessee, Lessor agrees to accept and shall receive out of the production or the proceeds from the production from such derating unit or units, such portion of the one-eighth royalty specified herein as the number of acres (mineral acres) out this lease placed in any such operating unit or units bears to the total number of acres included in such operating unit units. The commencement of a well, or the completion of a well to production of either oil, gas, casinghead gas, condensate, or other minerals on any portion of an operating unit in which all or any part of the land described herein is embraced, or production of oil, gas, casinghead gas, condensate, or other minerals therefrom shall have the same effect under the terms of this lease as if a well were commenced, completed or producing oil, gas, casinghead gas, condensate, or other minerals in paying quantities on the land embraced by this lease. Lessee shall execute in writing and file for record in the records of the Parish in which the lands herein leased are located, an instrument identifying or describing the pooled acreage, or an instrument supplemental thereto redesignating same, as the case may be. Either prior to the securing of production from any unit created under the authority hereinabove granted, or after cessation of production therefrom Lessee duction from any unit created under the authority hereinabove granted, or after cessation of production therefrom Lessee shall have the right to dissolve the unit so created, without Lessor's joinder or further consent, by executing in writing and placing of record in the Parish or Parishes in which the lands making up such unit may be located, an instrument identifying and dissolving such unit. The provisions hereof shall be construed as a covenant running with the land and shall inure

to the benefit of and be binding upon the parties hereto, their heirs, representatives, successors and assigns.

8. If Lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided shall be paid to Lessor only in the proportion which Lessor's interest

bears to the whole and undivided fee.

9. Lessee shall have free use of oil, gas, casinghead gas, condensate, coal and water from said land, except water from Lessor's wells, for all operations hereunder, including repressuring, pressure maintenance and recycling, and the royalty shall be computed after deducting any so used. Lessee shall have the right at any time during or after the expiration of this lease to remove all property and fixtures placed by Lessee on said land, including the right to draw and remove all casing. When required by Lessor, Lessee will bury all pipe lines below ordinary plow depth, and no well shall be drilled within two hundred feet of any residence or barn now on said land, without Lessor's consent. In the event a well or wells, producing oil gas, easinghed gas or condensate in paying quantities should be brought in an adjacent lands not a residence. producing oil, gas, casinghead gas or condensate in paying quantities should be brought in on adjacent lands not owned by the Lessor and within one hundred fifty feet of and draining the leased premises, Lessee agrees to drill such offset well

by the Lessor and within one hundred fifty feet of and draining the leased premises, Lessee agrees to drill such offset well or wells as a reasonably prudent operator would drill under the same or similar circumstances.

10. The rights of either party hereunder may be assigned in whole or in part and the provisions hereof shall extend to the heirs, executors, administrators, successors and assigns, but no change or division in ownership of the land, rentals or royalties, however accomplished shall operate to enlarge the obligations or diminish the rights of Lessee. No such person acquiring any interest has furnished Lessee, at its principal place of business, with a certified copy of the intertument or instruments, constituting his chain of title from the original Lessor. In the event of an assignment of this lease as to a segregated portion of said land, or as to an undivided interest therein, the rentals payable hereunder shall be apportioned as between the several leasehold owners ratably according to the surface area of each, or according to the undivided interest of each, and default in rental payment by one shall not affect the rights of other leasehold owners hereunder. An assignment of this lease, in whole or in part, shall, to the extent of such assignment, relieve and discharge Lessee of any obligations hereunder and, if Lessee or assignee of part or parts hereof shall fail or make default in the payment of the proportionate part of the rentals due from such Lessee, or assignee, or fail to comply with any other provisions of the lease, such default shall not affect this lease insofar as it covers a part of said lands upon which Lessee or any assignee thereof shall make payment of said rentals. thereof shall make payment of said rentals.

11. In case of suit, adverse claim, dispute or question as to the ownership of the rentals or royalties (or some part thereof) payable under this lease, Lessee shall not be held in default in payment of such rentals or royalties (or the part thereof in dispute), until such suit, claim, dispute or question has been finally disposed of, and Lessee shall have thirty (30) days after being furnished with a certified copy of the instrument or instruments disposing of such suit, claim, or dispute, or after being furnished with proof sufficient, in Lessee's opinion, to settle such question, within which to make payment. Should the right or interest of Lessee hereunder be disputed by Lessor, or any other person, the time covered by the pendency of such dispute shall not be counted against Lessee either as affecting the term of the lease or for any other purpose, and Lessee may suspend all payments without interest until there is a final adjudication or other determination of such dispute.

of such dispute.

12. In case of cancellation or termination of this lease from any cause, Lessee shall have the right to retain, under the terms hereof, around each well producing, being worked on, or drilling hereunder, the number of acres in the form allocated to each such well under spacing and proration rules issued by the Commissioner of Conservation of the State of Louisiana, or any other State or Federal authority having control of such matters; or, in the absence of such rulings, forty (40) acres around each such well in as near a square form as practicable, and in the event Lessor considers that operations are not being conducted in compliance with this contract, Lessee shall be notified in writing of the facts relied upon as constituting a breach hereof and Lessee shall have sixty (60) days after receipt of such notice to comply with the obligations imposed by virtue of this instrument.

13. When drilling, reworking, production or other operations are delayed or interrupted by force received that in the state of the state o

13. When drilling, reworking, production or other operations are delayed or interrupted by force majeure, that is, by storm, flood or other acts of God, fire, war, rebellion, insurrection, riot, strikes, differences with workmen, or failure of carriers to transport or furnish facilities for transportation, or as a result of some law, order, rule, regulation, requisition or necessity of the government, Federal or State, or as a result of any cause whatsoever beyond the control of the Lessee, the time of such delay or interruption shall not be counted against Lessee, anything in this lease to the contrary notwithstanding, but this lease shall be extended for a period of time equal to that during which Lessee is so prevented from conducting such drilling or reworking operations on, or producing oil, gas, casinghead gas, condensate or other minerals from, the premises; provided, this paragraph 13 shall not relieve Lessee from the necessity of either paying delay rentals or shut-in royalty as the case may be, during the primary term in order to continue this lease in force solely by force majeure, and during any period this lease is continued in force after its primary term solely by force majeure as herein provided, Lessee shall pay to the owners of the royalty hereunder the shut-in royalty provided in paragraph 5 hereof, and in the manner therein provided, without regard to whether or not there is a producing well shut in, located on said land or on land with

which the lease premises or any part thereof has been pooled.

14. It is expressly understood and agreed that the premises leased herein shall, for all the purposes of this lease, be considered and treated as owned in indivision by the Lessor and shall be developed and operated as one lease, and there shall be no obligation on the part of Lessee to offset wells on separate tracts into which the land covered by this lease may be now or hereafter divided by sale, or otherwise, or to furnish separate measuring or receiving tanks, and all rentals, royalties and other payments accruing hereunder shall be treated as an entirety and shall be divided among and paid to Lessor in the proportion that the acreage (mineral rights) owned by each bears to the entire leased acreage. Lessee may at

any time or times pay or tender all rentals or other sums accruing hereunder to the joint credit of Lessor.

15. Notwithstanding the death of any party Lessor, or his successor in interest, the payment or tender of rentals in the manner provided above shall be binding on the heirs, executors and administrators of such person.

16. Lessor hereby wight to redee to defend the title to the lands herein described, and agrees that the Lessee to the standard of the at its option shall have the right to redeem for Lessor, by payment, any mortgage, taxes or other liens on the above described lands, in the event of default of payment by Lessor, and be subrogated to the rights of the holder thereof. In case of payment of any such mortgage, taxes or other liens by Lessee, in addition to the right of subrogation herein granted, Lessee shall also have the right to retain any rentals or royalties which become due Lessor hereunder and to repay itself therefrom, and the retention of such rentals or royalties by Lessee shall have the same effect as if paid to the Lessor in whose behalf payment of any mortgage, taxes or other liens was made.

17. This lease shall be binding upon all who execute it, whether or not named in the body hereof as Lessor, and

without regard to whether this same instrument, or any copy thereof, shall be executed by any other Lessor named above.

- 18. It is understood that Lessor is leasing only an undivided 1/2 interest in and to the oil and gas minerals and the lease is in no event to cover outstanding mineral rights that might revert to Lessor.
- 19. It is understood that this lease does not cover any solid minerals such as coal and lignite, except sulphur which is specifically set out.
- 20. If Lessee or his assigns should exercise the rights under paragraph 7 hereof, it is understood that in no case shall the right to pool exceed 160 acres for any one unit if the production is from a depth of 4600 feet or less.

IN WITNESS WHEREOF, this instrument is executed on the date first above written.

Robert

Notary Public in and for-

RECEIVED & FILED DE SOTO PARISH, LA. Aug 30 3,36 PM 1976 PARTIAL ASSIGNMENT OF OIL, GAS AND MINERAL LEASE

DEPUTY CLERK & RECORDER WHEREAS, Monte Carlo Exploration, Inc. a Louisiana Corpora tion (hereinafter referred to as the "Assignor") is the owner of

89% of the working interest in the Oil, Gas and Mineral Leases covering the following described property:

> Lots 1 and 2, Section 34: Northwest Quarter of North-west Quarter, and fractional Southwest Quarter of Northwest Quarter and Lots 3, 4, and 5 of Section 35: Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, La., and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26; All in Township 12 North, Range 11 West, containing 363.96 acres, more or less, DeSoto Parish, Louisiana, and

Lots 1 and 2, Section 34: Lots 3, 4, 5, 6, and 7, Northwest Quarter of Northwest Quarter: fractional Southwest Quarter of Northwest Quarter; all in Section 35: Lots 1 and 2, Section 36: Lot 4 and 16 acres off of the South side of Lot 3 of Joseph King Partition of April 30, 1892, Conveyance Book 5 at page 592, described as all of Lot 5 and the South Seven 7 chains of Lot 2 of Section 26: All in Town-ship 12 North, Range 11 West, containing 541.995 acres, more or less. This assignment to cover from the surface of the ground to a depth of 4500 feet or the Base of the Morringsport Lime, whichever is the lesser.

only insofar as said leases cover and apply to the following described land:

> Lots 1 and 2, Section 34: Northwest Quarter of Northwest Quarter, fractional Southwest Quarter of North-west Quarter; Section 35: All in Township 12 North, Range 11 West, all apart of the 393.96 acres, more or less, DeSoto Parish, Louisiana. This assignment to cover only down to a depth of 4500 feet or the Base of the Mooringsport Lime, whichever is the lesser, and

> Lots 3, 4, and 5 of Section 35: Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, Louisiana and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26: All in Township 12 North, Range 11 West, all apart of the 393.96 acres, more or less, DeSoto Parish, This assignment to cover only down to a Louisiana. depth of 4500 feet or the Base of the Mooringsport Lime, whichever is the lesser.

WHEREAS, the Assignor desires to assign, transfer and convey an interest in the said leases to VanderGraham Exploration, Inc., a Texas corporation (hereinafter referred to as the "Assignee").

Now, Therefore, in consideraiton of one dollar and other good and valuable consideration, the receipt of which is hereby acknowledged, Assignor does hereby bargain, sell, transfer, assign and convey 65% of the working interest in the said leases and rights thereunder, together with all personal property used or obtained in connection therewith, to the Assignee, his successors and assigns.

And for the same consideration, the Assignor hereby covenants with the Assignee that it is the lawful owner of the interest in the said leases which is being conveyed hereunder and all rights thereunder, and of the personal property thereon or used in connection therewith, free and clear of all liens, encumbrances and restrictions of every kind; that it has full right and authority to sell and convey the same; that all rentals and royalties due and payable under the said leases have been duly paid; and that it will warrant and defend the same against the lawful claims and demands of all persons whomsoever.

IN WITNESS WHEREOF, the Assignor has executed this Partial Assignment this 5th day of August, 1976.

MONTE CARLO EXPLORATION, INC.

By and Alminish

STATE OF TEXAS

COUNTY OF DALLAS

Before me, the undersigned, a notary public in and for said county and state, on this day personally appeared for and officer whose name is subscribed in the foregoing instrument and acknowledged that the same was the act of Monte Carlo Exploration, Inc., a corporation, and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity stated therein.

Given under my hand and seal of office this 5th day of August, 1976.

[SEAL]

Notary Public in and for

Dallas County, Texas

My Commission Expires:

PREPARED BY:

West 1. 1977

Wynne & Jaffe 1000 LTV Tower Dallas, Texas 75201

PARTIAL ASSIGNMENT OF OIL, GAS AND MINERAL LEASE

WHEREAS, Vander/Graham Exploration, Inc., as Texas Corporation (hereinafter referred to as the "Assignor") is the owner of 65% of the working interest in the Oil, Gas and Mineral leases covering the following described property:

Lots 1 and 2, Section 34: Northwest Quarter of North west Quarter, and fractional Southwest Quarter of Northwest Quarter and Lots 3, 4, and 5 of Section 35: Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, La., and other wise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26; All in Township 12 North, Range 11 West, containing 363.96 acres, more or less, DeSoto Parish, Louisiana and

Lots 1 and 2, Section 34: Lots 3, 4, 5, 6, and 7
Northwest Quarter of Northwest Quarter: fractional Southwest Quarter of Northwest Quarter; all in Section 34: Lots 1 and 2, Section 36: Lot 4 and 10 acres off of the South side of Lot 3 of Joseph King Partition of April 30 1892, Conveyance Book 5 at page 592, described as all of Lot 5 and the South Seven 7 chains of Lot 2 of Section 26: All in Town ship 12 North, Range 11 West, containing 541.995

only insofar as said leases cover and apply to the following described land:

Lots 1 and 2, Section 34: Northwest Quarter of Northwest Quarter, fractional Southwest Quarter of Northwest Quarter; Section 35: All in Township 12 North, Range 11 West, all apart of the 393.96 acres, more or less, DeSoto Parish, Louisiana. This assignment to cover only down to a depth of 4500 feet or the Base of the Morringsport Lime, whichever is the lesser, and

Lots 3, 4, and 5 of Section 35: Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, Louisiana and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26: All in Township 12 North, Range 11 West, all apart of the 393.96 acres, more or less, DeSoto Parish, Louisiana. This assignment to cover only down to a depth of 4500 feet or the Base of the Morringsport Lime, whichever is the lesser.

WHEREAS, the Assignor desires to assign, transfer and convey an interest in the said leases to Arthur Sherman(hereinafter referred to as the 'Assignee'').

Now, Therefore, in consideration of one dollar and other good and valuable consideration, the receipt of which is hereby acknowledged, Assignor does hereby bargain, sell, transfer, assign and convey 33-1/3% of the working interest in the #1 Varner well and the surrounding 40 acres in a square as near as possible, and 33-1/3% of the working interest in the #2 Varner well and the surrounding 40 acres in a square as near as possible, together with all personal property used or obtained in connection therewith, to the Assignee, his heirs, successors and assigns.

And for the same consideration, the Assignor hereby covenants with the Assignee that it is the lawful owner of the interest in the said leases which is being conveyed hereunder and all rights thereunder, and of the personal property thereon or used in connection therewith, free and clear of all liens, encumbrances and restrictions of every kind; that is has full right and authority to sell and convey the same; that all rentals and royalties due and payable under the said leases have been duly paid; and that it will warrant and defend the same against the lawful claims and demands of all persons whomsoever.

IN WITNESS WHEREOF, the Assignor has executed this Partial Assignment this day of August, 1976.

VANDER/GRAHAM EXPLORATION, INC.

By J David Carolin Law

STATE OF TEXAS
COUNTY OF DALLAS

Before me, the undersigned, a notary public in and for said county and state, on this day personally appeared Land Vander, known to me to be the person and officer whose name is subscribed in the foregoing instrument and acknowledged that the same was the act of Vander/Graham Exploration, Inc., a corporation, and that he executed the same as the act of such corporation, and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity stated therein.

Given under my hand and seal of office this 5th day of August,

1976.

Notary Public in and for Dallas County, Texas

(SEAL)

My Commission Expires:

Oct 1,1977

PREPARED BY:

Wynne & Jaffe

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OPERATING AGREEMENT

THE STATE OF TEXAS
COUNTY OF DALLAS

THIS AGREEMENT, made and entered into by and between MONTE CARLO EXPLORATION, INC., a Louisiana Corporation hereinafter called "Operator" and the undersigned parties other than Operator,

Ĭ

WITNESSETH

WHEREAS, the parties hereto are the owners of a certain oi and gas 'ease covering certain and described in Exhibit "A", referred to as the Joint Property; and

WHEREAS, the parties hereto desire to enter into an agreement for the development, operation and management of the Joint Property described in Exhibit "A";

NOW THEREFORE, in consideration of the mutual covenants and agreements herein contained, it is agreed that the Joint Property described in Exhibit "A" shall be deve oped and operated for oil and gas purposes in accordance with the terms and provisions of this agreement, which are as follows, to wit:

l.

Operator shall have full direction, management, super vision and control of the Joint Froperty and, subject to the provisions hereof, shall conduct and manage the development and operation of said Joint Property for the production of oil and gas for the Joint Account of the parties hereto.

2.

All costs, expenses and liabilities accuring or resulting from the operation of the Joint Property pursuant to this agreement shall be determined, shares, borne, and paid by the parties hereto in the proportions set out in Exhibit "A", under the heading "Interest of Parties", with the exception of the cost of drilling and completing wells, the provisions and terms of which are set out in Paragraph 23 of this agreement. All such costs, expenses, and liabilities, including all ad valorem taxes assessed against the Joint Property, shall be paid by Operator for the Joint Account and Operator shall charge each of the parties hereto with his respective proportionate share. It is agreed that with respect to Varner #1 and #2 wells that all interest owners listed on Exhibit A will receive their proportionate interest directly from the gatherer. It is further agreed that Operator will bill monthly all working interest owners listed on Exhibit "A" their proportionate share of all Operating Expenses monthly. This agreement shall not be effective on the above mentioned we'ls until same are completed into the tanks and completely paid for as to drilling, fracing, etc.

3,

Operator, at his election, may require each of the other parties hereto to advance his proportionate part of the cost of developing and operating the Joint Property as provided in this paragraph. On or before the last day of each calender month. Operator may submit an itemized estimate

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of such cost for the succeeding calender month to each of the other parties hereto, with a request for payment of such other party's part thereof. Within ten (10) days after the receipt of such estimate, each of the other parties hereto shall pay to Operator the amount of such party's sahre of such estimate. Adjustments between estimates and actual costs shall be made by Operator at the close of each calender month, and the accounty of the parties adjusted accordingly.

4.

The respective interests of the parties hereto which are subjected to this agreement are set forth in Exhibit "A" attached hereto and made a part hereof, under the heading "Interests of Parties". All production of oil and gas from the Joint Froperty, subject to the payment of applicable royalties thereon and to the payment of any overriding royalties or production payments which may be a burden on the entire working interest, shall be owned by the parties hereto in the respective proportions as set out in Exhibit "A", under the heading "Interests of Parties". Any and all equipment, including casing, tubing, fittings, flow lines, separator, tank battery, and all other personalty now located on or used in connection with the subject lease will be on a lease basis and each of the parties hereto shall pay his proportionate share of such rental in the same proportion shown for his interest in the attached Exhibit "A".

5.

Without the consent in writing of all parties hereto:

(a) No well shall be drilled on the Joint Property.

(b) No single expenditure shall be made by Operator in developing and operating the Joint Property, or for capital investment, in excess of Seven Hundred and No/100 (\$700.00), except in connection with a well, the drilling of which has been previously authorized pursuant to this agreement.

6.

All the wells on the Joint Property shall be drilled on a competitive contract basis, at the usual rates prevailing in the area. With the consent of the other parties, Operator, if he so desires, may employ his own tools and equipment in the drilling of wells, but in such event the charge therefor shall not exceed the prevailing rate in the field, which rate shall be agreen upon before commencement of a well, and such work shall be performed by Operator in a good and workmanlike manner and under the same terms and conditions as shall be customery and usual in the field in the contracts of independent contractors who are doing work of a similar nature.

7.

Each of the parties hereto shall always have the right and privilege of receiving in kind or of separately disposing of his share of the oil, gas and other minerals produced and saved from the Joint Property. Each of the parties hereto shall execute all division orders or other instruments pertaining to the sale of his share of such production. Any extra expense incurred by reason of the separate disposition or taking in kind of his share of the production by any party hereto shall be born by such party.

Each of the parties hereto shall have access of the Joint Property at all reasonable times, to inspect and observe any operations thereon, and shall have access at all reasonable times to all information pertaining to the development and operation of the Joint Property, and Operator, upon request, shall furnish the other parties at the well, in containers furnished by such other parties, samples of all cores, cuttings and fluids from any well on the Joint Property. Each of the parties shall have the right to inspect and audit, at all reasonable times during business hours, the books and records of Operator, pertaining to the Joint Property; provided, however, such inspection and audit shall be limited to a term of two years preceding the time such audit is requested.

9.

The lease covered by this agreement shall not be surrendered in whole or in part unless the parties mutually consent thereto. Should any party or parties at any time desire to surrender all or any part of such jointly owned lease, and the other party or parties should not agree or consent to such surrender, the party or parties desiring to so surrender shall assign, without warranty of title, express or implied, all of his interest in such lease or portion thereof such party desires to surrender to the party or parties not desiring to surrender (in proportion to their interest in the Joint Property), and thereupon such assigning party shall be relieved from all obligations thereafter (but not theretofore) accuring in connection with such assigned acreage. From and after the making of such assignment, assigning party shall have no further interest in the lease assigned but shall be entitled to be paid for his interest in any material moved on said lease at its salvage value.

10.

No well which is producing or has oncepproduced shall be No abandoned without the mutual consent of the parties hereto; provided, however, if the parties are unable to agree as to the abandonment of any well, then the party or parties not desiring to abandon the well shall tender to each of the parties desiring to abandon, the proportionate share of such abandoning party in the salvage value of the equipment and reclaimable casing and tubing in and on said well moved on said lease after deducting the cost of recovery. Upon receipt of said sum each party desiring to abandon such well shall without warranty of title, express or implied, assign to the party or parties tendering said sum his interest in said well and the equipment therein, together with all of his rights in all working interest production therefrom which may be produced from the formation or formations from which such well is producing. If there is more than one nonabandoning party, such assignment shall r un in favor of the nonabandonparties in proportion to their respective interests.

11.

The judgement and discretion of Operator, exercised in good faith, shall be the limit of liability of Operator to the other parties hereto, and Operator shall never be liable to any of the other parties hereto for any act done or omitted to be done in good faith in in performance of any of the provisions of this agreement. Operator

shall not be liable to any of the other parties hereto for any failure to perform or for any loss caused by strikes, riots, fires, tornadoes, floods, or any other cause, whether of like character or not, beyond the control of Operator, and which the exercise of reasonable diligence could not avoid.

12

In the event any party desires to sell all of his interest or an undivided part of his interest in all of the Joint Property, the other party or parties hereto shall have a preferential right to purchase the same as follows: In the event a party hereto desires to accept a bona fide offer for the sale of all or a part of his interest in said lease, he shall notify the party or parties in writing, giving them the name of the prospective purchaser, the amount, and all of the terms and provisions, which shall constitute a ten day irrevocable offer by such party to sell to the other party or parties on such terms. If less than all of the other parties desire to accept such offer, it may be accepted by such of them as desire to accept same, and if there is more than one accepting party, they shall be entitled to participate in such purchase in proportion to their interests in the Joint Property. If the other party or parties do not accept such offer by giving or mailing to the offerer written notice thereof within such ten-day period, then the offerer will be free to sell to such prospective purchaser in accordance with such terms; provided, however, if for any reason the sale is not consummated within three months following such notice to the other parties, then this preferential right of purchase shall again attach to the interest described in the notice to the other parties. The provisions of this paragraph shall not apply where any party hereto desires to mortgage his interest, or to dispose of his interest by merger, reorganization, consolidation, or sale of all of his assets, or a sale of his interest to a subsidiary ornallied company, or subsidiary of an allied company, or to any company in which such party owns a majority of the stock. However, each party hereto expressly agrees to furnish, prior to any such encumbrance, me rger, reorganization, consolidation or sale, a copy of this instrument to any such mortgages or assignee, which mortgages or assignee shall then be bound by all of the respective provisions hereof. If Operator sells or disposes of his interest, other than in the manner last hereinabove provided as being excepted from the provisions of this paragraph, the right to operate the Joint Property shall not pass with the transfer of Operator's interest, and the owners of the Joint Property, after such assignment, shall designate a new Operator. Any sale made by any party shall be made expressly subject to the terms and provisions hereof, and the purchasing party shall expressly assume the obligations of the selling party hereunder.

13.

(a) The number of employees, the selection of such employees, the hours of labor, and the compensation for services to be paid any and all such employees shall be determined by Operator, and all such employees shall be the employees of Operator.

(b) There shall be allowed as an expense of operation and paid unto Operator the sum of One Hundred and No/100 (\$100.00) Dollars per month for administrative costs and services, it being understood that any revision of said amount may be made only with the written consent of all parties.

Operator shall carry, for the benefit and at the expense of the Joint Account, insurance with responsible insurance carriers as follows:

(a) Workmen's Compensation and Employer's Liability insurance as may be required by law.

(b) General Public Liability and Property Damage Insurance with limits of not less than \$100,000.00 covering injury to or death of one person, and not less than \$300,000.00 covering injury to or death of more than one person by reason of one accident, and not less than \$25,000.00 covering accidental loss of or damage to property of third persons.

No other insurance shall be carried at the expense of the Joint Accounty, except by mutual consent of the parties.

16.

The rights of the parties hereunder shall be individual and not joint or collective. Each party hereto shall be responsible only for his obligations as set out herein and shall be liable only for his proportionate share of the cost of developing and operating the Joint Property. It is expressly agreed that it is not the purpose or intention of this agreement to create as between the parties, nor shall the same be construed as creating any, mining partnership, commercial partnership or other partnership relation, nor shall the operations of the respective parties hereunder be considered or construed as a joint venture.

17

All notices, reports, and correspondence permitted or required to be given to any party hereunder, except as otherwise specifically provided herein, shall be given in writing by U. S. Mail, or by telegram, postages or charges prepaid, addressed to such party at the address listed under the signature hereto of such party. Any party may change his address by appropriate written notice to Operator and the other party or parties hereto.

18.

All of the terms and provisions of this agreement are hereby expressly made subject to all federal and state laws and to all valid rules regulations and orders of any duly constituted authority having jurisdiction in the premises.

19.

Subject to the other provisions hereof, this agreement shall remain in full force and effect during the life of the jointly owned lease and any renewals or extensions thereof, whether by production or otherwise, and thereafter until all materials, equipment, supplies and properties have been salvaged and disposed of, and until a final settlement between all parties has been made.

20.

All of the terms and provisions of this agreement shall extend to and be binding upon the parties hereto, their respective heirs, representatives, and assigns, and shall constitute covenants running with the land and the mineral leasehold estate in the Joint Property.

Under section 761 of the Internal! Revenue Code of 1954 and applicable regulations, the parties hereby elect that the Joint Operations of the properties be excluded from Sub-Chapter K of Chapter I of sub-title A of such Revenue Code or such sections as may be authorized by the Secretary of the Treasury or his delegate. Operator shall file on Information rendition as required by such code, but Operator shall not have authority tomake any election effecting the income tax status of any party hereto.

22.

The parties may upon a vote of fifty-one percent (51%) in interest, not in numbers, remove the Operator and substitue a successor as provided herein. Upon such removal, Operator shall become a Non-Operator with all the rights and duties of a Non-Operator. Upon removal of Operator pursuant to this paragraph, Operator shall immediately deliver to its successor all records and information necessary to the discharge by the new Operator of its duties and obligations. Thereupon, Operator shall be relieved of all future responsibilities in that connection but shall not be relieved of claims of mismanagement or any other claims arising prior to such removal.

IN WITNESS WHEREOF the undersigned parties have set their hands this the 30m day of linguist

This agreement to become effective upon production of #2 Varner well in the tanks.

> MONTE CABLO EXPLORATIONS, INC. Garland A. Smith, President

STATE OF TEXAS

COUNTY OF DALLAS

Before me, the undersigned, a notary public in and for said county and state, on this day personally appeared baland known to me to be the person and officer whose name Smith is subscribed in the foregoing instrument and acknowledged that the same was the act of Monte Carlo Exploration, Inc., a corporation, and that he executed the same as the act of such corporation, and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity stated therein.

Given under my hand and seal of office this 30 day of August, 1976.

Notary Public in and for

Dallas County, Texas

Commission Expires:

This agreement may be signed in counterpart, and shall be binding upon the parties and upon their heirs, successors, representatives and assigns.

VANDER/GRAHAM EXPLORATION I

- David Varder Sam

STATE OF TEXAS

COUNTY OF DALLAS

Before me, the undersigned, a notary public in and for said county and state, on this day personally appeared Jacob known to me to be the person and officer whose name is subscribed in the foregoing instrument and acknowledged that the same was the act of Vander/Graham Exploration, Inc., a corporation, and that he executed the same as the act of such corporation, and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity stated therein.

Given under my hand and seal of office this 3014 day of

August, 1976.

Carol A. Davidson

Notary Public in and for

Dallas County, Texas

EXHIBIT "A"

Lots 1 and 2, Section 34: Northwest Quarter of Northwest Quarter, fractional Southwest Quarter of Northwest Quarter; Section 35: All in Township 12 North, Ringe 11 West, all apart of the 393.96 acres, more or less, DeSoto Parish, Louisiana. This assignment to cover only down to a depth of 4500 feet or the Base of the Morringsport Lime, whichever is the lesser, and

Lots 3, 4, and 5 of Section 35: Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, Louisiananand otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26: All in Township 12 North, Range 11 West, all apart of the 393.96 acres, more or less, DeSoto Parish, Löuisiana. This assignment to cover only down to a depth of 4500 feet or the Base of the Morringsport Lime, which ever is the lesser.

DIVISION OF INT EREST

Monte Carlo Exploration, Inc.

35%

Vander/Graham Exploration, Inc.

65%

Remaining parties, including Operator.

DEC 39 1 53 PM 1976

STATE OF LOUISIANA,

Parish	of NATCHITOCHES	Columbia	372P/37	BY THESE PRESENTS
	ROBERT G. VARNER			
*****	Jamie Ruth Dean Varn			,
	residents of			S, Louisiana,
BARG.	clare that he AIN, SELL, CONVEY AND DE of all rights and actions of warra	LIVER, with full gu	arantee of title and with	complete transfer and subro-
	JOE DAVID VARNER, a	single_man,	whose address i	s-P0Box-969
	Natchitoches, Louisi	iana,		
residen	(s) of Natchitoches. Lou	isiana.	, and assigns, the followi	ng described property, to-wit:
	One-Fourth	(_1/4th) of t	he oil, gas and other mi	nerals, in and under and that
may be	produced from the following desc	ribed lands situated	in the Parish ofD	eSoto, Louisiana:
	Lots 1 and 2 of Sect Quarter, Fractional and Lots 3, 4, and 5 the South side of Lo Page 592, of the Con and otherwise descri of Lot 2 of Section containing 363.96 ac	Southwest Quality of Section of 3 of Jos. oveyance Recorded as all of 26, all in T	arter of Northw 35; Lot 4 and 1 King Partition ords of DeSoto P of Lot 5 and the Cownship 12 Nort	est Quarter 6 acres off as per Book 5, arish, Louisiana, South 7 chains
				· · · · · · · · · · · · · · · · · · ·
	It is understood between the partic	es hereto that this sa	le is made subject to any	valid and duly recorded oil and
rentals	se, but covers and includes One or royalties due and to become du ay be hereafter paid in order to ke	ie under the terms o	f any such lease, and a lil	of all the oil royalties and gas ce interest in all money rentals
	This sale is made for the consider	ation of the sum of.	Five Hundred a	nd No/100 (\$500.00)
Dollar	Dollars and Other Va			xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
	IN WITNESS WHEREOF this i	nstrument is signed	on the 27th da	y of December 19.76
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Witnes	s:			2/2000/3
Bu	Tey Garher Juston Bradlan	; , ,	Robert G. Varne	Varia
-6	riship Dieadlaik			

SALE OF MINERAL RIGHTS

FROM

TO

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397

DEPUTY CLERK & RECORDER

2 ° £1. "

STATE OF LOUISIANA:

PARISH OF NATCHITOCHES:

BEFORE ME, the undersigned authority, came and appeared ROBERT G. VARNER, husband of Jamie Ruth Dean Varner, who declared:

Whereas, your appearer is the fee owner of the following described property, situated in De Soto Parish, Louisiana, to-wit:

Lots 1 and 2, Section 34; Northwest quarter of Northwest quarter, fractional Southwest quarter of Northwest quarter and Lots 3, 4 and 5 of Section 35; Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592, of the Conveyance Records of De Soto Parish, Louisiana, and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26; all in Township 12 North, Range 11 West, containing 363.96 acres, more or less.

Whereas, K. M. Menefee deeded to Hugh M. Sneed 1/2 of the oil, gas, and other minerals in and to the above described property on April 19, 1948, as recorded in Book 175, page 604, Conveyance Records of De Soto Parish, Louisiana;

Whereas, Trans-Gulf Petroleum Corporation, a Louisiana corporation domiciled in Bossier Parish, Louisiana, whose mailing address is Box 5355, Bossier City, Louisiana, has acquired by mesne conveyances the 1/2 mineral interest in and to the above described property deeded by K. M. Menefee to Hugh M. Sneed as aforesaid.

Whereas, some question and dispute has arisen as to whether or not this 1/2 mineral interest owned by Trans-Gulf Petroleum Corporation covering the above described land has expired by prescription or whether the same is in full force and effect.

That for and in consideration of the sum of One Hundred (\$100.00) Dollars and other valuable considerations, receipt of which is hereby acknowledged, and in order to settle the question and dispute that has arisen, your appearer, Robert G. Varner

392185

acknowledges that as of this date the 1/2 mineral interest owned by Trans-Gulf Petroleum Corporation as to the above described 363.96 acres is in full force and effect and that your appearer, Robert G. Varner acknowledges said fact as of this date for the purpose of reacknowledging the said mineral ownership as well as to acknowledge the full validity as of this date of the above undivided 1/2 mineral interest owned by Trans-Gulf Petroleum Corporation in and to the above described property and as hereinabove set forth.

Done and signed this _____ day of January, 1977, before the undersigned Notary and undersigned competent witnesses.

WITNESSES:

NOTARY PUBLIC.
Notary Public, State of Florida at Large

Motary Public, State of Florida at Large My Commission Expires June 24, 1980 Bonded By American Fire & Coruelty Company

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R.E.Smith, Its President			
the sum of \$10.00 and other va			Dollars
id by REBEL EXPLORATION, INC	., a Louisiana c o rporat	ion	
the receip			
anted, bargained, sold and conveyed, and do Exploration, Inc.			
nd to that certain oil, gas and mineral lease exe			
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	Parish, Louisiana, in	favor ofDavid E.Bu	rk,Sr.
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Due S. J.

EASTERN OIL COMPANY
BY:

STATE OF LOUISIANA	
48 PARISH OF	
	a Notary Public in and for
•	, personany came and appeared
	and
· · · · · · · · · · · · · · · · · · ·	the identical personwho executed the foregoing instrument in writing,
·	ne and genuine signature, and thatheexecuted said instrument of
own free will, and for the purposes and con	
have hereunto subscribed their names, together with said appearer	in the presence of the before named and undersigned competent witnesses, who and me, said Notary, after reading the whole.
	, and the state of
WITNESSES:	
	Notary Public.
STATE OF LOUISIANA	
PARISH OF CADDO)
BEFORE ME, the undersigned authority, this day personally to me personally known to be the identical person whose name is subs	appearedGariand A.Smith cribed to the foregoing instrument as an attesting witness, who being first duly
sworn, on his oath, says: That he subscribed his name to the foregoing	ng instrument as a witness, and that he knows
R.E.Smith, President of Monte	Carlo Exploration and Eastern Oil Company
sign the same as	described therein, and who executed the same, and saw him
subscribed his name to the same at the same time as an attesting with	~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Sworn to and subscribed before me, this 30th	
day of March 19 77	1 (a) and the smith
Migalett Shiller	
Notary Public in and for Caddo Parish, Louisia	na.
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RECEIVED & FILED DE 3070 PARISH, LA

May 20 9 5 11 1977

Detection of the policy Bill 24 F266

PRIVILEGE

STATE OF TEXAS

COUNTY OF DALLAS

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, came and appeared VANDER/GRAHAM EXPLORATION, INC., represented herein by T. D_{AVID} $VANDER_{AAN}$, its $P_{RESTORNT}$, duly authorized and acting, who, after being duly sworn, did declare that:

Monte Carlo Exploration, Inc., a Louisiana Corporation, is justly and truly indebted unto Vander/Graham Exploration, Inc., in the full sum of Five Thousand Three Hundred Ninety One and 23/100ths (\$5,391.23) Dollars.

That such amount is due for materials and supplies furnished and labor and services performed, in connection with the drilling and operations of the Varner No. 1 and Varner No. 2 Wells, located on the following described oil, gas and mineral leases:

OIL, GAS AND MINERAL LEASE from Robert G. Varner, husband of Jamie Ruth Dean to David E. Burk, Sr., dated April 26, 1976 and recorded in Conveyance Book 370, page 93, under Registry Number 387078 of the Records of DeSoto Parish, Louisiana, and

OIL, GAS AND MINERAL LEASE from Trans-Gulf Petroleum Corporation to Energy Resources of Minn., Inc. dated May 24, 1976 and recorded in Conveyance Book 370, page 25 under Registry Number 387028 of the Records of DeSoto Parish, Louisiana.

The first work done or services performed on said wells and leases was done on or about August 23, 1976 and continues through date hereof as shown by the statements attached hereto and made a part hereof.

That for the monies due Vander/Graham Exploration, Inc. as above set forth, together with the cost of preparing and filing this lien in the amount of Two Hundred Fifty and No/100ths (\$250.00) Dollars and ten (10%) percent attorneys fees on the amount due, there is hereby claimed on behalf of Vander/Graham Exploration, Inc. a lien and privilege provided

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by LSA- R. S. 9:4861 - 4867, inclusive, as amended, against the undivided thirty five (35%) percent interest owned by Monte Carlo Exploration, Inc. in the Varner No. 1 and Varner No. 2 Wells and the leases whereupon same are situated, as above identified, and all of the said Monte Carlo Exploration, Inc.'s undivided interest in the oil and gas produced from the wells located on said leases and the proceeds thereof inuring to the benefit of said working interest owner, and all movable property thereon siutated.

THUS DONE AND SIGNED before me, Notary, and the undersigned competent witnesses, on this the 17% day of MAYVANDER/GRAHAM EXPLORATION, INC.

STATE OF TEXAS

COUNTY OF DALLAS

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared T. DAVID VANDER LAAD known to me to be the person and officer whose names is subscribed in the foregoing instrument and acknowledged that the same was the act of Vander/ Graham Exploration, Inc., a Corporation, and he executed the same as the act of such corporation for the purposes and considerations therein expressed, and the capacity stated therein.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 17th day of MAY 1977.

Notary Public, in and for Dallas

My commission expires:__

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

LEASE: Varner

WELL: #2

DATE: March, 1977

\$602.93

Total Operating Expenses March, 1977

per attached

\$1722.65

35% Interest Owned Expenses Due

\$602.93

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

LEASE:

Varner

WELL:

#2

DATE: February, 1977

\$1243.21

Total Operating Expenses February, 1977 per attached

\$3,552.04

35% Interest Owned Expenses Due

\$1243.21

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl

OPERATING EXPENSE:

LEASE: Varner

WELL: #2

DATE:

January, 1977

\$833.91

Total Operating Expenses January, 1977

per attached

\$2382.61

35% Interest Owned Expenses Due

\$833.91

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

\$668.19

LEASE:

WELL:

Varner

#1

DATE: August, 1976

Total Operating Expenses August, 1976 per attached

\$1,909.12

35% Interest Owned Expenses Due

\$668.19

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

LEASE:

Varner

\$227.15

WELL:

#2

DATE:

September, 1976

Total Operating Expenses September, 1976

per attached

\$649.00

35% Interest Owned Expenses Due

\$277.15

274

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

LEASE:

Varner

\$108.50

WELL: #1

DATE:

April, 1977

Total Operating Expenses April, 1977

\$309.99

per attached

35% Interest Owned Expenses Due

\$108.50

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

275

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

LEASE:

Varner

WELL:

#1

DATE: September, 1976 \$149.10

Total Operating Expenses September, 1976

per attached

\$426.00

35% Interest Owned Expenses Due

\$149.10

276

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

LEASE:

Varner

\$133.00

WELL:

#1

DATE: December, 1976

Total Operating Expenses December, 1976

\$380.00

per attached

35% Interest Owned Expenses Due

\$133.00

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

LEASE:

Varner

\$218.68

WELL:

#1

DATE:

January, 1977

Total Operating Expenses January, 1977

\$624.80

per attached

35% Interest Owned Expenses Due

\$218.68

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Exp.

OPERATING EXPENSE:

LEASE:

Varner

\$796.64

WELL:

#1

DATE: February, 1977

Total Operating Expenses February, 1977 per attached

\$2,276.11

35% Interest Owned Expenses Due

\$796.64

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo, Expl.

OPERATING EXPENSE:

LEASE: Varner

WELL: #1

\$162.80

DATE: March, 1977

Total Operating Expenses March, 1977 per attached

\$645.13

35% Interest Owned Expenses Due

\$162.80

RECEIVED & FILED DE SOTO PARISH. LA.

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STATE OF LOUISIANA:

PARISH OF DE SOTO:

BE IT KNOWN, that this day before me, the undersigned Notary Public in and for said Parish, duly commissioned and sworn, came and appeared

ROBERT G. VARNER, husband of Jamie Ruth Dean Varner, joined herein by his wife, JAMIE RUTH DEAN VARNER, residents of Natchitoches Parish, Louisiana,

who declared that they do by these presents grant, bargain, sell, convey and deliver, with full warranty of title and with complete transfer and subrogation of all rights and actions of warranty against all former proprietors of the property presently conveyed unto

WILLIAM T. DUGAN and MARTHA OUTLAW DUGAN, being husband and wife, respectively, whose mailing address is Route 2, Box 164-E, Mansfield, Louisiana 71052

the following described property, situated in De Soto Parish, Louisiana, to-wit:

Lots 1 and 2 of Section 34; Northwest quarter of Northwest quarter, Fractional Southwest quarter of Northwest quarter and Lots 3, 4 and 5 of Section 35; Lot 4 and 16 acres off the South side of Lot 3 of Ds. King Partition, as per Book 5, page 592, of the Conveyance Records of De Soto Parish, Louisiana, and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26, all in Township 12 North, Range 11 West, containing 363.96 acres, more or less.

SUBJECT TO THE FOLLOWING:

- Mineral deed by K. M. Menefee to Hugh M. Sneed of 1/2 of all the oil, gas, and other minerals, dated April 19, 1948, recorded in Conveyance Book 179, page 604, Records of De Soto Parish, Louisiana.
- 2. Mineral deed by Robert G. Varner to Joe David Varner covering 1/4 of the oil, gas, and other minerals dated December 24, 1976, recorded in Conveyance Book 372, page 137, Records of De Soto Parish, Louisiana.

- 3. Oil and gas lease by Robert G. Varner to David E. Burk, Sr. dated April 26, 1976, for a primary term of five years, recorded in Conveyance Book 370, page 93, Records of De Soto Parish, Louisiana.
- 4. Oil and gas lease by Trans-Gulf Petroleum to Energy Resources dated May 24, 1976, for a primary term of five years from October 10, 1976, recorded in Conveyance Book 370, page 25, Records of De Soto Parish, Louisiana.
- 5. Right of way deed to State of Louisiana by D. L. Kelly dated May 20, 1954, recorded in Conveyance Book 204, page 485, Records of De Soto Parish, Louisiana.
- 6. Any presently existing rights of way for pipelines, electric lines or roads or any presently existing acquired right of way.
- 7. Right of way by Joe Leone to Louisiana Intrastate Gas Corporation for pipeline dated February 24, 1969, recorded in Conveyance Book 297, page 428, Records of De Soto Parish, Louisiana.
- 8. Acknowledgment by Robert G. Varner in favor of Trans-Gulf Petroleum Corporation as to their ownership of 1/2 of all the oil, gas, and other minerals in and to said property of date January 19, 1977, recorded in Conveyance Book 373, page 397, Records of DeSoto Parish, Louisiana.
- 9. Acknowledgment by Rogert G. Varner in favor of Trans-Gulf Petroleum Corporation as to their ownership of 1/2 of all the oil, gas, and other minerals in and to said property of date February 4, 1977, recorded in Conveyance Book 373, page 413, Records of DeSoto Parish, Louisiana.
- 10. In addition to the above, vendors, Robert G. Varner and Jamie Ruth Dean Varner reserve unto themselves, their heirs and assigns, all of the oil and gas mineral rights presently owned by them (being an undivided 1/4 interest in and to said oil and gas mineral rights) in and to said property.

TO HAVE AND TO HOLD said property unto said purchasers, William T. Dugan and Martha Outlaw Dugan, their heirs and assigns forever.

This sale is made for and in consideration of the sum of Two Hundred Thirty Six Thousand, Six Hundred & No/100 (\$236,600.00) Dollars, cash in handpaid, receipt of which is hereby acknowledged.

Done and passed at my office in De Soto Parish, Louisiana, in the presence of the undersigned good and competent witnesses, on the 13th day of July, 1977.

WITNESSES:

Robert G. Varner

amic Kuth Dean Ya

William T. Dugan

Martha Outlaw Dugan

NOTARY-PUBLIC.

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AMENDING AND SUPPLEMENTAL AFFIDAVIT OF CLAIM O

STATE OF TEXAS

COUNTY OF DALLAS

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, came and appeared VANDER/GRAHAM EXPLORATION, INC., represented herein by T. David VanderLaan, its President, duly authorized and acting, who, after being duly sworn, did declare that:

By Affidavit dated May 17, 1977, and filed on May 20, 1977, in Mortgage Records of DeSoto Parish, Louisiana, under Registry No. 394,762, Vander/Graham Exploration, Inc., gave notice of its claim of Privilege against the undivided 35% interest owned by Monte Carlo Exploration, Inc., a Louisiana Corporation, in the Varner No. 1 and Varner No. 2 Wells, and the lease; whereon same are situated, being more particularly described as:

OIL, GAS AND MINERAL LEASE from Robert G. Varner, husband of damie Ruth Dean to David E. Burk, Sr., dated April 26, 1976 and recorded in Conveyance Book 370, page 93, under Registry No. 387,078 of the Records of DeSoto Parish, Louisiana, and

OIL, GAS AND MINERAL LEASE from Trans-Gulf Petroleum Corporation to Energy Resources of Minn., Inc., dated May 24, 1976 and recorded in Conveyance Book 370, page 25, under Registry No. 387,028 of the Records of DeSoto Parish, Louisiana.

As appears by reference to said Affidavit, the privilege claimed by Vander/Graham Exploration, Inc., was for the sum of FIVE THOUSAND THREE HUNDRED NINETY-ONE AND 23/100 (\$5,391.23) DOLLARS, representing Monte Carlo's proportionate share of the costs and expenses for materials and supplies furnished and labor and services performed in connection with the drilling and operations of the Varner No. 1 and Varner No. 2 Wells and the leases whereon same are situated; that such work commenced on or about August 23, 1976, and continued through the date of the filing of the aforesaid Affidavit.

That during the period following the filing of this Affidavit,

Vander/Graham Exploration, Inc., has continued to serve as operator of the

83%

Varner Lease and Varner Wells and, as such, has incurred additional costs and expenses in connection with such operations.

That for these costs and expenses, Monte Carlo Exploration, Inc., a Louisiana Corporation, and its successors and assigns, is justly and truly indebted unto Vander/Graham Exploration, Inc., in the additional sum of TWO THOUSAND NINE HUNDRED EIGHTY-ONE AND 94/100 (\$2,981.94) DOLLARS, making a total amount due of EIGHT THOUSAND THREE HUNDRED SEVENTY-THREE AND 17/100 (\$8,373.17) DOLLARS.

That the entire amount remains owing andunpaid and is due for materials and supplies furnished and labor and services performed in connection with the drilling and operations of the Varner No. 1 and Varner No. 2 Wells, and the leases whereon same are situated, as more fully described above.

set forth, together with the cost of preparing and filing the Original
Affidavit and this Supplemental Affidavit in the amount of FIVE HUNDRED AND
NO/100 (\$500.00) DOLLARS and 10% attorneys fees on the principal and interest
due, the said Vander/Graham Exploration, Inc., reaffirms and reasserts its
claim of lien and privilege against the undivided 35% interest owned by
Monte Carlo Exploration, Inc., and its successors and assigns, in the Varner
No. 1 and Varner No. 2 Wells and the leases whereon same are situated, and
in the oil and gas produced form the wells located on said leases and the
proceeds thereof inuring to the benefit of said working interest owner, and
all movable property thereon situated, all as provided by LSA-R.S. 9:4861
et seq.

WITNESSES:

VANDER/GRAHAM EXPLORATION, INC.

T. David VanderLaan, President

Robert J. Drannon

Notary Public

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo

OPERATING EXPENSE:

LEASE:

Varner

\$245.00

WELL:

1 & 2

DATE: January - July, 1977

\$50.00 per well per well per month per Operating Agreement \$700.00 administrative overhead 35% working interest \$245.00

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo

OPERATING EXPENSE:

LEASE:

Varner

#1 - \$87.50

WELL:

1 & 2

#2 - \$87.50

DATE: July, 1977

Operating Expense July, 1977

Total Varner #1

\$250.00

Total Varner #2

\$250.00

\$175.00 - 35% Operating Expense

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

82%

Mode Cado STATEMENT:

OPERATING EXPENSE:

LEASE:

Varner

#1 - \$113.85

WELL:

1 & 2

#2 - \$ 94.68

DATE:

June, 1977

Operating Expense June, 1977

Total Varner #1

\$325.29

Total Varner #2

\$270.50

\$208,52 - 35% Operating Expense

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo

OPERATING EXPENSE:

LEASE:

Varner

#1- \$782.32 #2 - \$104.97

WELL: 1 & 2

DATE: May, 1977

Operating Expense May, 1977

Total Varner #1

\$2,235.21

Total Varner #2

299.92

887.29-35% Operating Expenses

VANDER/GRAHAM EXPLORATION, INC. 6440 No. Central Expressway Dallas, Texas 75206

STATEMENT: Monte Carlo Expl.

OPERATING EXPENSE:

\$1,466.13

LEASE: Varner

WELL: 1 & 2

DATE: March 15, 1977, to July, 1977

Operating Expense

Varner 1 & 2

\$4,188.94 \$1,466.13 - 35% Operating Expenses

ROY D. WEBB, SHERIFF

Desoto Parish, Louispansore PARISH, LA

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VANDER/GRAHAM EXPLORATION, INC

Suit No. 36, 124

VS.

ELEVENTH Judicial District

MONTE CARLO EXPLORATION, INC. ET AL

DE SOTO Parish, Louisiana

Notice is hereby given in accordance with R. S. 13:3851 through 13:3861, that I have seized and taken into my possession the following described real property, to-wit:

(1) That a writ of sequestration issue herein without bend, according to law, commanding the Sheriff of this Parish to seize and take into his possession all of the defendants undivided 35% interest in the Varner No. 1 and Varner No. 2 Wells, and the following described oil, gas and mineral leases, whereupon said wells are situated:

Oil, gas and mineral lease from Robert G. Varner, husband of Jamie Ruth Dean, to David E. Burk, Sr., dated April 26, 1976, and recorded in Conveyance Book 370, page 93, under Registry No. 387,078 of the Records of DaSoto Parish, Louisiana; and

Oil, gas and mineral lease from Trans-Gulf Petroleum Corporation to Energy Resources of Minn., Inc., dated May 24, 1976, and recorded in Conveyance Book 370, page 25, under Registry No. 387,028 of the Records of DeSoto Parish, Louisiana,

only insofar as said leases cover and apply to the following described lands:

Lots 1 and 2, Sec. 34; Lots 3, 4 and 5, NE/4 of NE/4 and frac. SW/4 of NW/4 of Sec. 35; Lot 4 and 16 acros off the south side of Lot 3 of Joseph King Partition, as per book 5, page 592, of the Conveyance Records of DeSoto Parish, Louisiana, and otherwise described as all of Lot 5 and the south 7 chains of Lot 2 of Sec. 26, all in Township 12 North, Bange 11 West, containing 363.96 acres, more or less, DeSoto Parish, Louisiana;

and, further, only insofar as said leases cover and affect the rights from the surface of the ground down to a depth of 4500 feet, or the base of the Mooringsport Line Porenties, whichever is the lesser;

and, further, to seize and take into his possession all of the defendants undivided 35% interest in the production from said wells and the proceeds theme? insting to the benefit of the working interest owned by the said defendants and a like interest in all moveble property situated on or appertaining to the said

Varner Lease.

2

Seized as property of Monte Carlo Exploration, Inc. and Rebel	
Exploration, Inc.	
at the suit of Vander/Graham Exploration, Inc.	_seizing creditor,
under a Writ ofSequestration	issued on the
18th day of Novebmer, 1977 , by the Clerk of the Elevent	h Judicial District
Court in and for the Parish of DeSoto, State of Louisiana.	•
Signed at Mansfield, Louisiana, on this the 21st day of November	er, 1977
ROY D. WEBB, Sheriff of the	

KOT D. WEBB, Shelin

Parish of DeSoto,

By Deputy

AMENDING AND SUPPLEMENTAL AFFIDAVIT OF CLAIM OF PRIVILEGE

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RECEIVED & FILED DESOTO PARISH, LA.

STATE OF LOUISIANA PARISH OF CADDO

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and Parish aforesaid, personally came and appeared VANDER/GRAHAM EXPLORATION, INC., represented herein by T. David Vanderlaan, its President, duly authorized and acting, who, after being duly sworn, did declare that:

That by Affidavit dated May 17, 1977, and filed on May 20, 1977, in Mortgage Records of DeSoto Parish, Louisiana, under Registry No. 394,762, and amended by Supplemental Affidavit dated October 17, 1977, and filed on November 18, 1977, under Registry No. 399,927 of Records of DeSoto Parish, Louisiana, Vander/Graham Exploration, Inc., gave notice of its claim of privilege against the undivided thirty five percent (35%) interest owned by Monte Carlo Exploration, Inc., a Louisiana corporation, in the Varner No. 1 and Varner No. 2 Wells, and the leases whereon same are situated, being more particularly described on Exhibit "A" attached hereto and by reference made a part hereof.

That by Assignment of Oil, Gas and Mineral Lease, dated March 30, 1977, Monte Carlo Exploration, Inc., conveyed to Rebel Exploration, Inc., a Louisiana corporation, all of the said Monte Carlo's undivided thirty five percent (35%) interest in and to the oil, gas and mineral leases described on Exhibit "A" attached hereto, and the said Rebel Exploration, Inc., assumed all of the debts of Monte Carlo arising from the drilling and operations on said leases.

That as appears by reference to the said Affidavits, the privilege claimed by Vander/Graham Exploration, Inc., was for the sum of EIGHT THOUSAND THREE HUNDRED SEVENTY THREE AND 17/100 (\$8,373.17) DOLLARS, representing an undivided thirty five percent (35%) of the costs and expenses for materials and supplies furnished and labor and services performed in connection with the

drilling and operations of the Varner No. 1 and Varner No. 2 Wells and the leases whereon same are situated; and that such work commenced on or about August 23, 1976, and continued through the date of the filing of said Affidavits.

That during the period following the filing of these Affidavits, Vander/Graham Exploration, Inc., has continued to serve as operator of the Varner Lease and Varner Wells, and, as such, has incurred additional costs and expenses for materials and services in connection with such operations.

That for these costs and expenses, Monte Carlo Exploration, Inc., a Louisiana corporation, and its successor in title, Rebel Exploration, Inc., a Louisiana corporation, are justly and truly indebted unto Vander/Graham Exploration, Inc., in the additional sum of THIRTY ONE THOUSAND FIFTY SIX AND 68/100 (\$31,056.68) DOLLARS, making a total amount due of THIRTY NINE THOUSAND FOUR HUNDRED TWENTY NINE AND 85/100 (\$39,429.85) DOLLARS.

That the entire amount remains owing and unpaid and is due for materials and supplies furnished and labor and services performed in connection with the drilling and operations of the Varner No. 1 and Varner No. 2 Wells, and the leases whereon same are situated, as more fully described hereinabove.

That for the monies due Vander/Graham Exploration, Inc., as above set forth, together with the costs of preparing and filing the original Affidavit, the first supplemental Affidavit, and this supplemental Affidavit, in the amount of SEVEN HUNDRED FIFTY AND NO/100 (\$750.00) DOLLARS, and ten percent (10%) attorney's fees on the principal and interest due, the said Vander/Graham Exploration, Inc., re-affirms and re-asserts its claim of lien and privilege against the undivided thirty five percent (35%) interest owned by Rebel Exploration, Inc. (acquired from Monte Carlo Exploration, Inc.), and its successors and assigns, in the Varner No. 1 and Varner No. 2 Wells and the leases whereon same are situated, and in the oil and gas produced from the wells located

on said leases and the proceeds thereof inuring to the benefit of said working interest owner, and all movable property thereon situated, all as provided by LSA - R.S. 9:4861 et seq.

THUS DONE AND SIGNED, before me, Notary, and the undersigned competent witnesses on this _____ day of June, 1979.

WITNESSES:

VANDER/GRAHAM EXPLORATION, INC.

BY: Marie Card Card

NOMA DY DUDI TO

DAVID B. CLINICNBEARD MODARY PUBLIC, Coddo Portel, Louisiana My Commission is for Life OIL, GAS AND MINERAL LEASE from Robert G. Varner, husband of Jamie Ruth Dean to David E. Burk, Sr., dated April 26, 1976 and recorded in Conveyance Book 370, page 93, under Registry No. 387,078 of the Records of DeSoto Parish, Louisiana, and

OIL, GAS AND MINERAL LEASE from Trans-Gulf Petroleum Corporation to Energy Resources of Minn., Inc., dated May 24, 1976 and recorded in Conveyance Book 370, page 25, under Registry No. 387,028 of the Records of DeSoto Parish, Louisiana

INSOFAR ONLY AS said leases cover and apply to the following described lands:

Township 12 North, Range 11 West

SECTION 26: Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592 of the Conveyance Records of DeSoto Parish, Louisiana, and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26;

SECTION 34: Lots 1 and 2;

SECTION 35: Northwest Quarter of Northwest Quarter (NW $\frac{1}{4}$ of NW $\frac{1}{4}$), fractional Southwest Quarter of Northwest Quarter, (frac. SW $\frac{1}{4}$ of NW $\frac{1}{4}$) and Lots 3, 4 and 5;

comprising 363.96 acres, more or less, in DeSoto Parish, Louisiana;

AND INSOFAR ONLY as said leases cover and apply to those depths and formations lying between the surface of the ground and 4,500 feet, or the base of the Mooringsport Lime Formation, whichever is the lesser.

VANDER/GRAHAM EXPLORATEON TO THE LA

NUMBER 36,124

VERSUS

THOUSICIAL DISTRICT COURT CORDER DESOTO PARISH, LOUISIANA MONTE CARLO EXPLORATION

UDGMENT

THIS CAUSE having come on regularly for trial on June 5, 1979, petitioner, Vander/Graham Exploration, Inc., appearing herein in person, and defendants, Rebel Exploration, Inc., and Garland Λ . Smith, appearing herein through their counsel of record, A. R. Snell, and the defendant, Monte Carlo Exploration, Inc., having been served through its agent for service of process, Garland A. Smith, and through the Secretary of State in accordance with Article 1262 of Louisiana Code of Civil Procedure, and having failed to answer or appear herein, and default having been entered on May 10, 1979, and having been set this date for confirmation, the evidence having been adduced, and the law and evidence being in favor thereof, and for the reasons assigned in Open Court:

IT IS ORDERED, ADJUDGED AND DECREED:

That there be judgment in favor of petitioner, Vander/ Graham Exploration, Inc., and against the defendants, Monte Carlo Exploration, Inc., Rebel Exploration, Inc., and Garland A. Smith, in the full sum of THIRTY NINE THOUSAND FOUR HUNDRED TWENTY NINE AND 85/100 (\$39,429.85) DOLLARS, together with interest thereon at the legal rate of seven percent (7%) per annum from date of judicial demand until paid, together with the sum of SEVEN HUNDRED FIFTY AND NO/100 (\$750.00) DOLLARS as costs of preparing and recording petitioner's liens and privileges dated May 17, 1977, and filed May 20, 1977, under Registry No. 394,762, as amended by supplemental Affidavit dated October 17, 1977, filed on November 18, 1977, under Registry No. 399,927, and as further amended and supplemented by Affidavit dated June 5, 1979, and filed on June 5, 1979, under Registry No. 4/5/9, all of Records of DeSoto Parish, Louisiana, plus ten percent (10%) on the original sum (\$39,429.85) as attorney's fees and for all costs of these proceedings.

(2) That the writ of sequestration issued herein on November 18, 1977, be maintained and that petitioner's privilege and right of pledge be recognized and maintained in full force and effect on the following described properties:

An undivided thirty-five percent (35%) interest in the:

Oil, Gas and Mineral Lease from Robert G. Varner, husband of Jamie Ruth Dean, to David E. Burk, Sr., dated April 26, 1976, and recorded in Conveyance Book 370, page 93, under Registry No. 387,078 of the Records of DeSoto Parish, Louisiana; and

Oil, Gas and Mineral Lease from TransGulf Petroleum Corporation to Energy Resources of Minn., Inc., dated May 24, 1976, and recorded in Conveyance Book 370, page 25, under Registry No. 387,028 of Records of DeSoto Parish, Louisiana,

ONLY INSOFAR AS said leases cover and apply to the following described lands:

Lots 1 & 2, Section 34; Lots 3, 4 & 5, Northwest Quarter of Northwest Quarter and fractional Southwest Quarter of Northwest Quarter of Section 35; Lot 4 & 16 acres off the South side of Lot 3 of Jos. King Partition, as per Book 5, page 592 of the Conveyance Records of DeSoto Parish, Louisiana, and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26, all in Township 12 North, Range 11 West, containing 363.96 acres, more or less, DeSoto Parish, Louisiana;

And further, INSOFAR ONLY AS said leases cover and affect the rights from the surface of the ground down to a depth of 4,500 feet, or the base of the Mooringsport Lime Formation, whichever is the lesser;

together with a like interest in the Varner No. 1 and Varner No. 2 Wells, all movable property situated on or appertaining to said wells and leases, and the proceeds of production inuring to the benefit of the working interest owned by the defendants, Rebel Exploration, Inc., and Monte Carlo Exploration, Inc.

JUDGMENT READ, RENDERED & SIGNED, in Mansfield, Louisiana, on this day of June, 1979.

Wi Charles From

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ASSIGNMENT OF OIL, GAS AND MINERAL

APR 30 10 19 AM 1931 Kay Basco LABASE 1937 POSTAGE

WHEREAS, VANDER/GRAHAM EXPLORATION INC., a Texas corporation herein represented by T. David VanderLaan, President, duly authorized by resolution of its Board of Directors (and hereinafter referred to as the "ASSIGNOR") is the owner of .6666670 of the working interest and that same being .4933330 of the Revenue Interest in and to the following described Oil, Gas and Mineral Leases:

Lots 1 and 2, Section 34: Northwest Quarter of Northwest Quarter, and fractional Southwest Quarter of Northwest Quarter and Lots 3, 4, and 5 of Section 35:

Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, La., and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26; All in Township 12 North, Range 11 West, containing 363.96 acres, more or less, DeSoto Parish, Louisiana and:

Lots 1 and 2, Section 34: lots 3, 4, 5, 6, and 7 Northwest Quarter of Northwest Quarter; fractional Southwest Quarter of Northwest Quarter; all in Section 34: Lots 1 and 2, Section 36: Lot 4 and 16 acres off of the South side of Lot 3 of Joseph King Partition of April 30, 1892, Conveyance Book 5 at page 592, described as all of Lot 5 and the South Seven 7 chains of Lot 2 of Section 26: All in Township 12 North, Range 11 West, containing 541.995 acres, more or less. This assignment to cover from the surface of the ground to a depth of 4500 feet or the Base of the Morringsport Lime, whichever is the lesser.

only insofar as said leases cover and apply to the following described land:

Lots 1 and 2, Section 34: Northwest Quarter of Northwest Quarter, fracti-nal Southwest Quarter of Northwest Quarter; Section 35: All in Township 12 North, Range 11 West, all apart of the 393.96 acres, more or less, DeSoto Parish, Louisiana. This assignment to cover only down to a depth of 4500 feet or the Base of the Morringsport Lime, whichever is the lesser, and

Lots 3, 4, and 5 of Section 35: Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, Louisiana and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26: All in Township 12 North, Range 11 West, all apart of the 393.96 acres, more or less, DeSoto Parish, Louisiana. This assignment to cover only down to a depth of 4500 feet or the Base of the Morringsport Lime, whichever is the lesser.

WHEREAS, the ASSIGNOR desires to ASSIGN, TRANSFER and CONVEY all of its remaining right, title and interest in the said leases together with all personal property used or obtained in connection therewith, to

MISS-LA-TEX INC., a Louisiana corporation hereinafter referred to as the "ASSIGNEE".

NOW THEREFORE, in consideration of TEN DOLLARS (\$10.00) and other good and valuable considerations, the receipt and adequacy of which are hereby acknowledged, ASSIGNOR does hereby GRANT, BARGAIN, SELL, CONVEY, TRANSFER AND ASSIGN to ASSIGNEE, its successors and assigns, all of ASSIGNOR's right, title and interest in the above described leases and all rights thereunder, together with all personal property used or obtained in connection therewith.

CAC AND MINEDAL LEASE - Page One -

WHEREAS, ASSIGNOR hereby covenants and warrants with the ASSIGNEE that it is the lawful owner of the interest in the said leases which is being conveyed hereunder and all rights thereunder and of the personal property thereon or used in connection therewith; that it has full right and authority to sell and convey the same; that all rentals and royalties due and payable under the said leases have been duly paid; and that it will warrant and defend the same against the lawful claims and demands of all persons whomsoever.

The effective DATE OF THIS SALE shall be

, 198/.

IN WITNESS WHEREOF, the ASSIGNOR Has executed this Assignment this 28 day of Assignment, 198/.

THUS DONE AND SIGNED in the presence of the undersigned Notary Public and the competent attesting witnesses.

WITNESSED BY:

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SIGNED BY:

T. David VanderLaan, President VANDER/GRAHAM EXPLORATION INC.

STATE OF TEXAS

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COUNTY OF DALLAS

Beforeme, the undersigned, a notary public in and for said county and state, on this day personally appeared T. David VanderLaan, known to me to be the person and officer whose name is subscribed in the foregoing instrument and acknowledged that the same was the act of VANDER/GRAHAM EXPLORATION, INC., a corporation, and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity stated therein.

Given under my hand and seal of office this 28 day of aprice

1981.

Notary Public in and for Dallas

County, Texas

(SEAL)

My Commission Expires:

Jul 16 9 52 AM 1982

THE STATE OF LOUISIANA ASSIGNMENT, CONVEYANCE

PARISH OF DeSOTO

EK S/4 256 BILL OF SALE

Miss-La-Tex Inc., a Louisiana corporation ("Assignor"), P. O. Box 1761, Richardson, Texas 75080 herein represented by its President, Mikell F. VanderLaan, duly authorized by resolution of its Board of Directors, for Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged does hereby assign, grant and convey, with warranty of title by, through or under Assignor, to Arthur Sherman, husband of Elizabeth Sherman, 9720 Wilshire Boulevard, 4th Floor, Beverly Hills, California 90212 (hereinafter called "Assignee"), an undivided 16.7% of a 100% working interest in and to the following:

- 1. The Varner Lease ("Lease") a copy of which Lease is recorded in Volume 370, Page 93, of the Deed Records of DeSoto Parish, Louisiana, such Mineral Interest being more particularly described therein.
- 2. All wells, well bores, pipe and equipment ("Personal Property") located therein, thereon or used in connection with said Lease including, without limitation, all contractual rights related thereto.

Executed by Assignor as of the 14-16 day of 1982.

MISS-LA-TEX INC.

Secretary Candid Jon

T. David VanderLaan

(Type or Print Name)

Mikell F. VanderLaan

(Type or Print Name)

Juanita J. Gossmann

(Type or Print Name)

Witness

Witness

ATTEST:

Elaine M. Stuart

aine

(Type or Print Name)

447000

resident

THE STATE OF TEXAS)
COUNTY OF DALLAS)

BE IT KNOWN, that on this haday of succession of the undersigned Notary Public, duly commissioned and qualified within the State and County aforesaid, and in the presence of the witnesses hereinafter named and undersigned, personally came and appeared Mikell F. VanderLaan to me well known, who declared and acknowledged that he had signed and executed the foregoing instrument as his act and deed, and as the act and deed of MISS-LA-TEX INC., a corporation, for the consideration, uses and purposes and on the terms and conditions therein set forth.

And the said appearer, being by me first duly sworn, did depose and say that he is the President of said corporation and that he signed and executed said instrument in his said capacity, and under authority of the Board of Directors of said corporation.

Thus done and passed in the State and County aforesaid on the day and date first hereinabove written, and in the presence of Juanita J. Gossmann and Elaine M. Stuart competent witnesses, who have hereunto subscribed their names as such, together with said appearer and me, said authority, after due reading of the whole.

WITNESSES:

Notary Public in and for

Nancy C. Rush

(Type or Print Name)

My Commission Expires:

OIL GAS AND MINERAL

THIS AGREEMENT made this 22nd day of May ,1984, between ROBERT G. VARNER and RUTH DEAN VARNER, husband and wife, residents of Natchitoches Parish, Louisiana, whose mailing address is P. O. Box 699, Natchitoches, Louisiana 71457 and JOSEPH DAVID VARNER, husband of Sunny Lee Varner, acting herein with his separate property, resident of Natchitoches Parish, Louisiana, whose mailing address is P. O. Box 699, Natchitoches, Louisiana 71457 and TRANS-GULF PETROLEUM CORPORATION, a Louisiana corporation, hereinafter represented by its President, Hugh M. Sneed, duly authorized, whose mailing address is P. O. Box 5355, Bossier City, Louisiana 71111
lessor (whether one or more), and TRANS-GULF PETROLEUM CORPORATION AND JOE VARNER OIL, INC. lessee, WITNESSETH: 1. Lessor in consideration of One Hundred and no/100 & OVC
West for the 40 acres in a square in and around that certain oil well known as the Varner #2 Well and all that is located in Section 26, Township 12 North, Range 11 West for the acreage in a square in and around that certain oil well known as the Varner #1 Well, All located in Township 12 North, Range 11 West, down to the base of the Paluxy or 3000' whichever is lesser.
NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, when ever the fraction one-lighth (1/8) appears regarding royalty, it is hereby deemed changed Robert G. Varner and Ruth Dean Varner 1/4 of 1/8 = .03125 RI Joseph David Varner 1/4 of 1/8 = .03125 RI Trans-Gulf Petroleum 1/2 of 1/8 = .06250 RI
This lease also covers and includes battures, accretions and all other land owned by Lesson adjacent the land particularly described above. For the purpose of calculating the rental payments hereunder provided for, said-land is esti-
mated to comprise 98.17 acres, whether it actually comprises more or less. 2. Subject to the other provisions herein contained, this lease shall be for a period of ten years from this date (called "primary term") and as long thereafter as (1) oil, gas, sulphur or other mineral is produced from said land hereunder or from land pooled therewith; or (2) it is maintained in force in any other manner herein provided. (a) It is the intention of the parties that this lease shall also extend and apply to all outstanding mineral rights or servitudes affecting the lands herein described as the same may revert to Lessor, his heirs or assigns, from time to time. 3. The royalities to be paid by Lessee are: (a) on oil, and other hydrocarbons which are produced at the well in liquid form by ordinary production methods, one-eighth of that produced and saved from said land, same to be delivered at the wells or to the credit of Lessor in the pipe line to which the wells may be connected; Lessor's interest in either case to bear its proportion of any expenses for treating the oil to make it marketable as crude; Lessee may from time to time purchase any royalty oil or other liquid hydrocarbons in its possession, paying the market price therefor prevailing for the field where produced on the date of purchase; (b) on gas, including casinghead gas, or other gaseous substance produced from said land and sold or used off the premises or for the extraction of gasoline or other products therefrom, the market value at the well of one-eighth of the gas so sold or used, provided that on gas sold at the wells the royalty shall be one-eighth of the amount realized from such sale; such gas, casinghead gas, residue gas, or gas of any other nature or description whatsoever, as may be disposed of for no consideration to Lessee, either through unavoidable waste or leakage, or in order to recover oil or other liquid hydrocarbons, or returned to the ground, shall not be deemed to have been sold or used either on or off the premises within the mea
pay or tender to the Lessor a rental of
which shall cover the privilege of deferring commencement of such operations for a period of twelve (12) months. In like manner and upon like payments or tenders, annually, the commencement of said operations may be further deferred for successive periods of the same number of months, each during the primary term. Payment or tender may be made to the
Lessor or to the credit of Lessor in Bank
at

of all obligations as to the acreage surrendered, and thereafter the rentals payable hereunder shall be reduced in the proportion that the acreage covered hereby is reduced by said release or releases, but all lands so released shall remain subject to easements for rights of way necessary or convenient for Lessec's operations on the land retained by it.

5. If Lessee obtains production of minerals on said land or on land with which the lease premises or any portion thereof has been pooled, and if, during the life of this lease either before or after the expiration of the primary term, all such production is shut in by reason of force majeure or the lack either of a market at the well or wells or of an available pipeline outlet in the field, this lease shall not terminate but shall continue in effect during such shut-in period as though production were actually being obtained on the premises within the meaning of paragraph 2 hereof, and, during the

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month of January of each year immediately succeeding any year in which a shut-in period occurred when all such production was so shut in, Lessee shall pay or tender, by check or draft of Lessee, to the royalty owners or to the royalty owners' credit in any depository bank named in this lease, as royalty, one-twelfth (1/12) of the amount of the delay rental provided for in paragraph 4 hereof for each full calendar month in the preceding calendar year that this lease was continued in force solely and exclusively by reason of the foregoing provisions of this paragraph. The owners of the royalty as of the date of such payment shall be entitled thereto in proportion to their ownership of the royalty. The provisions of this paragraph shall be recurring at all times during the life of this lease. Nothing in this paragraph contained shall abridge the right of Lessee to otherwise maintain this lease in force and effect under its other provisions, and for any part of a shut-in period that this lease is otherwise being maintained in force and effect no shut-in royalty shall be due.

right of Lessee to otherwise maintain this lease in force and effect under its other provisions, and for any part of a shut-in period that this lease is otherwise being maintained in force and effect no shut-in rovalty shall be due.

6. This lease will continue in full force and effect within or beyond the primary term as long as any mineral is produced from said land hereunder or from land pooled therewith. If within the primary term and prior to discovery of oil, gas, sulphur or other mineral, the production thereof should cease from any cause, this lease shall not terminate if Lessee commences or resumes the payment or tender of rentals or commences drilling operations or reworking operations on or before the rental paying date next ensuing after the expiration of ninety days from date of completion of such dry hole or cessation of production. If at any time subsequent to ninety days prior to the beginning of the last year of the primary term Lessee should drill a dry hole thereon or on land pooled therewith, or production previously secured should cease from any cause, no rental payment or operations are necessary in order to keep the lease in force during the remainder of the primary term. If such dry hole or holes be completed or abandoned or such production cease within less than ninety days before the end of the primary term, this lease shall continue in force and effect for ninety days from such completion or abandonment or cessation of production. If at the expiration of the primary term or at the expiration of the primary term or abandonment or cessation of production. If at the expiration or the primary term or at the expiration of the primary term or abandoned provided for in the preceding sentence, oil, gas, sulphur or other mineral is not being produced on said land or on land pooled therewith but Lessee is then engaged in drilling operations or reworking operations with no cessation between operations or between such cessation of production and additional operations of more than ninety consecuti

whether owned by Lessee or some other person, or corporation so as to create, by the combination of such lands and leases, one or more operating units, provided that no one operating unit shall, in the case of gas, including condensate, embrace more than six hundred forty (640) acres, and in the case of oil, including casinghead gas, embrace more than forty (40) acres; and provided further, however, that if any spacing or other rules and regulations of the State or Federal Commission, Agency, or regulatory body having or claiming jurisdiction has heretofore or shall at any time hereafter prescribe a drilling or operating unit or spacing rule in the case of gas, including condensate, greater than six hundred forty (640) acres, or in the case of oil or casinghead gas greater than forty (40) acres, then the unit or units herein contemplated may have mission, Agency, or regulatory body having or claiming jurisdiction has heretotore or shall at any time hereatter prescribe a drilling or operating unit or spacing rule in the case of gas, including condensate, greater than six hundred forty (840) acres, or in the case of oil or casinghead gas greater than forty (40) acres, then the unit or units herein contemplated may have, or may be redesigned so as to have, as the case may be, the same surface content as, but not more than, the unit or the acreage in the spacing rule so prescribed. However, it is further specifically understood and agreed, anything herein to the contrary notwithstanding, that the Lessee shall have the right to, and the benefit of an acreage tolerance of ten per cent in excess of any drilling or operating unit authorized herein. In the event such operating unit or units is/are so created by Lessee, Lessor agrees to accept and shall receive out of the production or the proceeds from the production from such operating unit or units, such portion of the one-eighth royalty specified herein as the number of acres (mineral acres) out of this lease placed in any such operating unit or units bears to the total number of acres included in such operating unit or units. The commencement of a well, or the completion of a well to production of either oil, gas, casinghead gas, condensate, or other minerals on any portion of an operating unit in which all or any part of the land described herein is embraced, or production of oil, gas, casinghead gas, condensate, or other minerals in paying quantities on the land embraced by this lease. Lessee shall execute in writing and file for record in the records of the Parish in which the lands herein leased are located, an instrument identifying or describing the pooled acreage, or an instrument supplemental thereto redesignating same, as the case may be. Either prior to the securing of production from any unit created under the authority hereinabove granted, or after cessation of production therefrom Lessee shall h

bears to the whole and undivided fee.

9. Lessee shall have free use of oil, gas, casinghead gas, condensate, coal and water from said land, except water from Lessor's wells, for all operations hereunder, including repressuring, pressure maintenance and recycling, and the royalty shall be computed after deducting any so used. Lessee shall have the right at any time during or after the expiration of this lease to remove all property and fixtures placed by Lessee on said land, including the right to draw and remove all casing. When required by Lessor, Lessee will bury all pipe lines below ordinary plow depth, and no well shall be drilled within two hundred feet of any residence or barn now on said land, without Lessor's consent. In the event a well or wells, producing oil gas casinghead gas or condensate in paying quantities should be brought in on adjacent lands not owned

within two hundred feet of any residence or barn new on said land, without Lessor's consent. In the event a well or wells, producing oil, gas, casinghead gas or condensate in paying quantities should be brought in on adjacent lands not owned by the Lessor and within one hundred fifty feet of and draining the leased premises, Lessee agrees to drill such offset well or wells as a reasonably prudent operator would drill under the same or similar circumstances.

10. The rights of either party hereunder may be assigned in whole or in part and the provisions hereof shall extend to the heirs, executors, administrators, successors and assigns, but no change or division in ownership of the land, rentals, or royalties, however accomplished shall operate to enlarge the obligations or diminish the rights of Lessee. No such change or division in the ownership of the land, rentals or royalties shall be binding upon Lessee for any purpose until such person acquiring any interest has furnished Lessee, at its principal place of business, with a certified copy of the instrument or instruments, constituting his chain of title from the original Lessor. In the event of an assignment of this lease as to a segregated portion of said land, or as to an undivided interest therein, the rentals payable hereunder shall be apportioned as between the several leasehold owners ratably according to the surface area of each, or according to the undivided interest of each, and default in rental payment by one shall not affect the rights of other leasehold owners hereunder. An assignment of this lease, in whole or in part, shall, to the extent of such assignment, relieve and discharge Lessee of any obligations hereunder and, if Lessee or assignee of part or parts hereof shall fail or make default in the payment of the proportionate part of the rentals due from such Lessee, or assignee, or fail to comply with any other provisions of the lease, such default shall not affect this lease insofar as it covers a part of said lands upon which Lessee or an

11. In case of suit, adverse claim, dispute or question as to the ownership of the rentals or royalties (or some part thereof) payable under this lease, Lessee shall not be held in default in payment of such rentals or royalties (or the part thereof in dispute), until such suit, claim, dispute or question has been finally disposed of, and Lessee shall have thirty (30) days after being furnished with a certified copy of the instrument or instruments disposing of such suit, claim, or dispute, or after being furnished with proof sufficient, in Lessee's opinion, to settle such question, within which to make payment. Should the right or interest of Lessee hereunder be disputed by Lessor, or any other person, the time covered by the pendency of such dispute shall not be counted against Lessee either as affecting the term of the lease or for any other purpose, and Lessee may suspend all payments without interest until there is a final adjudication or other determination of such dispute.

12. In case of cancellation or termination of this lease from any cause, Lessee shall have the right to retain, under the terms hereof, around each well producing, being worked on, or drilling hereunder, the number of acres in the form allocated to each such well under spacing and proration rules issued by the Commissioner of Conservation of the State of Louisiana, or any other State or Federal authority having control of such matters; or, in the absence of such rulings, forty

allocated to each such well under spacing and proration rules issued by the Commissioner of Conservation of the State of Louisiana, or any other State or Federal authority having control of such matters; or, in the absence of such rulings, forty (40) acres around each such well in as near a square form as practicable, and in the event Lessor considers that operations are not being conducted in compliance with this contract, Lessee shall be notified in writing of the facts relied upon as constituting a breach hereof and Lessee shall have sixty (60) days after receipt of such notice to comply with the obligations imposed by virtue of this instrument.

13. When drilling, reworking, production or other operations are delayed or interrupted by force majeure, that is, by storm, flood or other acts of God, fire, war, rebellion, insurrection, riot, strikes, differences with workmen, or failure of carriers to transport or furnish facilities for transportation, or as a result of some law, order, rule, regulation, requisition or necessity of the government, Federal or State, or as a result of any cause whatsoever beyond the control of the Lessee, the time of such delay or interruption shall not be counted against Lessee, anything in this lease to the contrary notwithstanding, but this lease shall be extended for a period of time equal to that during which Lessee is so prevented from conducting such drilling or reworking operations on, or producing oil, gas, cashighead gas, condensate or other minerals from, the premises; provided, this paragraph 13 shall not relieve Lessee from the necessity of either paying delay rentals or shut-in royalty as the case may be, during the primary term in order to continue this lease in force solely by force majeure, and during any period this lease is continued in force after its primary term solely by force majeure as herein provided, Lessee shall pay to the owners of the royalty hereunder the shut-in royalty provided in paragraph 5 hereof, and in the manner therein provided, without rega

alties and other payments accruing hereunder shall be treated as an entirety and shall be divided among and paid to Lessor in the proportion that the acreage (mineral rights) owned by each bears to the entire leased acreage. Lessee may at any time or times pay or tender all rentals or other sums accruing hereunder to the joint credit of Lessor.

15. Notwithstanding the death of any party Lessor, or his successor in interest, the payment or tender of rentals in the manner provided above shall be binding on the heirs, executors and administrators of such person.

16. Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the Lessee at its option shall have the right to redeem for Lessor, by payment, any mortgage, taxes or other liens on the above described lands, in the event of default of payment by Lessor, and be subrogated to the rights of the holder thereof. In case of payment of any such mortgage, taxes or other liens by Lessee, in addition to the right of subrogation herein granted, Lessee shall also have the right to retain any rentals or royalties which become due Lessor hereunder and to repay itself therefrom, and the retention of such rentals or royalties by Lessee shall have the same effect as if paid to the Lessor in whose behalf payment of any mortgage, taxes or other liens was made.

17. This lease shall be binding upon all who execute it, whether or not named in the body hereof as Lessor, and without regard to whether this same instrument, or any copy thereof, shall be executed by any other Lessor named above.

	py thereof, shall be executed by any other Lessor named above.
IN WITNESS WHEREOF, this instrument is execu	ited on the date first above written.
WITNESSES:	•
Elsine J. Harris	ROBERT G. VARNER SS# 429-42-5619
Helen Shanel	ROBERT G. VARNER SS# 429-42-5619
Essue J. Harrin	Jame Ruth Dean Carver RUTH DEAN VARNER SS# 431-24-3067
Hele Spendel	RUTH DEAN VARNER SS# 431-24-3067
Eloise & Havir	In Sand Varner
Uller Sherill	JOSEPH DAVID VARNER SS# 433-84-9051
Mland M Areed	And And South
Conthia L. Barajas	TRANS GULF PETROLEUM CORPORATION Hugh/M. Sneed, President
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	ACCEPTED PH:
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A Company of the comp	CTRANS-GOLF PETROLEUM CORPORATION
Unitie 2. Yarajas	Hugh M. Sneed, President
Mila IM Duel	for Varior President
Cynthia L. Barajas	JOE VARNER OIL INC. Joseph David Varner, President
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Parish of Hatchetoches	Chure, 1994, before me personally appeared
On this day of R.G. Varner, Jamie Ruth Dea	n Varner, & Joe David Varner
to me known to be the persondescribed in and who ex	recuted the foregoing instrument, and acknowledged thatheexecuted the
same asfree act and deed.	
In WITNESS WHEREOF I have hereunto set my of	flicial hand and seal on the date hereinebove written.
	fuder D tack
	Notary Public in and for Authorha Parish, Louisiana.
	Parish, Louisiana.
STATE OF LOUISIANA	
PARISH OF Sorting	
BEFORE ME, the undersigned authority, this day	personally appeared
the Grantor_named in said instrument, to be the identice the same as	at he., the said witness. Milliand Mil
OIL, GAS AND MINERAL I	BATH'S FORM LOUISIANA SPEC. 14-BR1-2A
duly sworn, onoath, says: Thatsubscribed the Grantor_named in said instrument, to be the identi	name is subscribed to the foregoing instrument as an attesting witness, who being first
Sworn to and subscribed before me, this	
day of	•
Notary Public in and for	

OIL, GAS AND MINERAL LEASE

22nd

THIS AGREEMENT	made this		day of June	1984	between 630
			•	sidents of Natchitoches, Louisiana 714	2 25 PH 101
ROBERT G. VARNER	and RUTH DEAN VA	RNER, husban	d and wife, re	sidents of Natchito	ches Parish
Louisiana, whose	mailing address	is P. O. Box	699, Natchito	ches, Louisiana 714	57 and July
JOE DAVID VARN	ER, husband of S	unny Lee Var	ner, acting her	rein with his separa	ate :
				mailing address is	
699, Natchitoches	. Louisiana 7145	7 and	•		, ,

TRANS-GULF PETROLEUM CORPORATION, a Louisiana corporation, hereinafter represented by its President, Hugh M. Sneed, duly authorized, whose mailing address is P. O. Box 5355, Bossier City, Louisiana 71111

lessor (whether one or more), and lessee, WITNESSETH: JOE VARNER OIL, INC and AJAX GAS CORPORATION

1. Lessor in consideration of One Hundred and no/100 & OVC 100.00 & OVC

ducted by Lessee thereon, or on any adjacent lands, the following described land in_ Louisiana, to-wit:

Lot 1 of Section 34, Township 12 North, Range 11 West containing 52.89 acres more or less and lot 4 of the Joseph King partition as per book 5, page 592 of the conveyance records of DeSoto Parish, Louisiana, and otherwise described all of lot 5 of Section 26, Township 12 North, Range 11 West, containing 58.77 acres more or less, all located in Township 12 North, Range 11 West, DeSoto Parish, Louisiana, this lease is limited, however in that it covers only those zones from the surface of the earth down to the base of the Paluxy zone or 3000 feet whichever is lesser.

NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, whenever the fraction oneeighth (1/8) appears regarding royalty, it is hereby deemed changed

Robert G. Varner and Ruth Dean Varner

1/4 of 1/8 = .03125 RI

David Varner Jo e Trans-Gulf Petroleum Corporation 1/4 of 1/8 = .03125 RI 1/2 of 1/8 = .06250 RI

This lease also covers and includes battures, accretions and all other land owned by Lessor adjacent to the land particularly described above. For the purpose of calculating the rental payments hereunder provided for, said laad is esti-

mated to comprise 111.66 acres, whether it actually comprises more or less. ON E

2. Subject to the other provisions herein contained, this lease shall be for a period of the years from this date (called "primary term") and as long thereafter as (1) oil, gas, sulphur or other mineral is produced from said land hereunder or from land pooled therewith; or (2) it is maintained in force in any other manner herein provided.

(a) It is the intention of the parties that this lease shall also extend and apply to all outstanding mineral rights or servitudes affecting the lands herein described as the same may revert to Lessor, his heirs or assigns, from time to time.

3. The royalties to be paid by Lessee are: (a) on oil, and other hydrocarbons which are produced at the well in liquid form by ordinary production methods, one-eighth of that produced and saved from said land, same to be delivered at the wells or to the credit of Lessor in the pipe line to which the wells may be connected; Lessor's interest in either case to bear its proportion of any expenses for treating the oil to make it marketable as crude; Lessee may from time to time purto bear its proportion of any expenses for treating the oil to make it marketable as crude; Lessee may from time to time purchase any royalty oil or other liquid hydrocarbons in its possession, paying the market price therefor prevailing for the field where produced on the date of purchase; (b) on gas, including casinghead gas, or other gaseous substance produced from said land and sold or used off the premises or for the extraction of gasoline or other products therefrom, the market value at the well of one-eighth of the gas so sold or used, provided that on gas sold at the wells the royalty shall be one-eighth of the amount realized from such sale; such gas, casinghead gas, residue gas, or gas of any other nature or description whatsoever, as may be disposed of for no consideration to Lessee, either through unavoidable waste or leakage, or in order to recover oil or other liquid hydrocarbons, or returned to the ground, shall not be deemed to have been sold or used either on or off the premises within the meaning of this paragraph 3 hereof; (c) on all other minerals mined and marketed, one-eighth, either in kind or value at the well or mine, at Lessee's election, except that on sulphur the royalty shall be one dollar (\$1.00) per long ton.

4. If operations for drilling or mining are not commenced on said land or on land pooled therewith on or before one year from this date, this lease shall terminate as to both parties, unless on or before one year from this date Lessee shall pay or tender to the Lesson a rental of the lesson a rental of the lesson a rental of the lesson are tender to the Lesson a rental of the lesson are tender to the Lesson a rental of the lesson are tender to the Lesson a rental of the lesson are tender to the Lesson are

one Hundred Eleven and 66/100 pollars pay or tender to the Lessor a rental of___

DOLLARS (\$. which shall cover the privilege of deferring commencement of such operations for a period of twelve (12) months. In like manner and upon like payments or tenders, annually, the commencement of said operations may be further deferred for

successive periods of the same number of months, each during the primary term. Payment or tender may be made to the BANK First Lessor or to the credit of Lessor in

at NATECHITOCHES LA., which bank, or any successor thereof shall continue to be agent for the Lessor, and Lessor's successors and assigns. If such bank (or any successor bank) shall fail, liquidate, or be succeeded by another bank, or for any reason fail or refuse to accept rental, Lessee shall not be held in default until thirty days after Lessor shall deliver to Lessee a recordable instrument, making provision for another method of payment, or tender, and any depository charge is a liability of the Lessor. The payment or tender of rental may be made by check or draft of Lessee, mailed or delivered to said bank of Lessor, on or before the rental paying date. The depth of the hole to which any well may be drilled hereunder in search of oil, gas or any other mineral shall be determined solely by Lessee. Lessee may at any time execute and deliver to Lessor or to the depository above named or place of record a release or releases covering any portion or portions of the above described premises and thereby surrender this lease as to such portion or portions and be relieved of all obligations as to the acreage surrendered, and thereafter the rentals payable hereunder shall be reduced in the proportion that the acreage covered hereby is reduced by said release or releases, but all lands so released shall remain subject to easements for rights of way necessary or convenient for Lessee's operations on the land retained by it.

5. If Lessee obtains production of minerals on said land or on land with which the lease premises or any portion thereof has been pooled, and if, during the life of this lease either before or after the expiration of the primary term, all such production is shut in by reason of force majeure or the lack either of a market at the well or wells or of an available pipeline outlet in the field, this lease shall not terminate but shall continue in effect during such shut-in period as though bank, or for any reason fail or refuse to accept rental, Lessee shall not be held in default until thirty days after Lessor shall

pipeline outlet in the field, this lease shall not terminate but shall continue in effect during such shut-in period as though production were actually being obtained on the premises within the meaning of paragraph 2 hereof, and, during the

month of January of each year immediately succeeding any year in which a shut-in period occurred when all such production was so shut in, Lessee shall pay or tender, by check or draft of Lessee, to the royalty owners or to the royalty owners' credit in any depository bank named in this lease, as royalty, one-twelfth (1/12) of the amount of the delay rental provided for in paragraph 4 hereof for each full calendar month in the preceding calendar year that this lease was continued in force solely and exclusively by reason of the foregoing provisions of this paragraph. The owners of the royalty as of the date of such payment shall be entitled thereto in proportion to their ownership of the royalty. The provisions of this paragraph shall be recurring at all times during the life of this lease. Nothing in this paragraph contained shall abridge the right of Lessee to otherwise maintain this lease in force and effect under its other provisions, and for any part of a shut-in period that this lease is otherwise being maintained in force and effect no shut-in royalty shall be due period that this lease is otherwise being maintained in force and effect no shut-in rovalty shall be due.

right of Lessee to otherwise maintain this lease in force and effect under its other provisions, and for any part of a shut-in period that this lease is otherwise being maintained in force and effect no shut-in rovalty shall be due.

6. This lease will continue in full force and effect within or beyond the primary term as long as any mineral is produced from said land hereunder or from land pooled therewith. If within the primary term and prior to discovery of oil, gas, sulphur or other mineral on said land or on land pooled therewith, Lessee should drill a dry hole or holes thereon or if after discovery of oil, gas, sulphur or other mineral, the production thereof should cease from any cause, this lease shall not terminate if Lessee commences or resumes the payment or tender of rentals or commences drilling operations or reworking operations on or before the rental paying date next ensuing after the expiration of ninety days from date of completion of such dry hole or cessation of production. If at any time subsequent to ninety days prior to the beginning of the last year of the primary term. Lessee should drill a dry hole thereon or on land pooled therewith, or production previously secured should cease from any cause, no rental payment or operations are necessary in order to keep the lease in force during the remainder of the primary term. If such dry hole or holes be completed or abandoned or such production cease within less than ninety days before the end of the primary term, this lease shall continue in force and effect for ninety days from such completion or abandonment or cessation of production. If at the expiration of the primary term or at the expiration of the primary term, this lease than the produced or such prod

drilling or operating unit or spacing rule in the case of gas, including condensate, greater than six hundred forty (640) acres, or in the case of oil or casinghead gas greater than forty (40) acres, then the unit or units herein contemplated may have, or may be redesigned so as to have, as the case may be, the same surface content as, but not more than, the unit or the acreage in the spacing rule so prescribed. However, it is further specifically understood and agreed, anything herein to the contrary notwithstanding, that the Lessee shall have the right to, and the benefit of an acreage tolerance of ten per cent in excess of any drilling or operating unit authorized herein. In the event such operating unit or units is/are so created by Lessee, Lessor agrees to accept and shall receive out of the production or the proceeds from the production from such operating uni: or units, such portion of the one-eighth royalty specified herein as the number of acres (mineral acres) out of this lease placed in any such operating unit or units bears to the total number of acres included in such operating unit or units. The commencement of a well, or the completion of a well to production of either oil, gas, casinghead gas, condensate, or other minerals on any portion of an operating unit in which all or any part of the land described herein is embraced, or production of oil, gas, casinghead gas, condensate, or other minerals in paying quantities on the land embraced by this lease. Lessee shall execute in writing and file for record in the records of the Parish in which the lands herein leased are located, an instrument identifying or describing the pooled acreage, or an instrument supplemental thereto redesignating same, as the case may be. Either prior to the securing of production from any unit created under the authority hereinabove granted, or after cessation of production therefrom Lessee shall have the right to dissolve the unit so created, without Lessor's joinder or further consent, by executing in writing and placin

to the benefit of and be binding upon the parties hereto, their heirs, representatives, successors and assigns.

8. If Lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the whole and undivided fee.

9. Lessee shall have free use of oil, gas, casinghead gas, condensate, coal and water from said land, except water from Lessor's wells, for all operations hereunder, including repressuring, pressure maintenance and recycling, and the royalty shall be computed after deducting any so used. Lessee shall have the right at any time during or after the expiration of this lease to remove all property and fixtures placed by Lessee on said land, including the right to draw and remove all casing. When required by Lessor, Lessee will bury all pipe lines below ordinary plow depth, and no well shall be drilled within two hundred feet of any residence or barn now on said land, without Lessor's consent. In the event a well or wells,

within two hundred feet of any residence or barn now on said land, without Lessor's consent. In the event a well or wells, producing oil, gas, casinghead gas or condensate in paying quantities should be brought in on adjacent lands not owned by the Lessor and within one hundred fifty feet of and draining the leased premises, Lessee agrees to drill such offset well or wells as a reasonably prudent operator would drill under the same or similar circumstances.

10. The rights of either party hereunder may be assigned in whole or in part and the provisions hereof shall extend to the heirs, executors, administrators, successors and assigns, but no change or division in ownership of the land, rentals, or royalties, however accomplished shall operate to enlarge the obligations or diminish the rights of Lessee. No such change or division in the ownership of the land, rentals or royalties shall be binding upon Lessee for any purpose until such person acquiring any interest has furnished Lessee, at its principal place of business, with a certified copy of the instrument or instruments, constituting his chain of title from the original Lessor. In the event of an assignment of this lease as to a segregated portion of said land, or as to an undivided interest therein, the rentals payable hereunder shall be apportioned as between the several leasehold owners ratably according to the surface area of each, or according to the undivided interest of each, and default in rental payment by one shall not affect the rights of other leasehold owners hereunder. An assignment of this lease, in whole or in part, shall, to the extent of such assignment, relieve and discharge Lessee of any obligations hereunder and, if Lessee or assignee of part or parts hereof shall fail or make default in the payment of the proportionate part of the rentals due from such Lessee, or assignee, or fail to comply with any other provisions of the lease, such default shall not affect this lease insofar as it covers a part of said lands upon which Lessee or an

thereof shall make payment of said rentals.

11. In case of suit, a Jverse claim, dispute or question as to the ownership of the rentals or royalties (or some part thereof) payable under this lease, Lessee shall not be held in default in payment of such rentals or royalties (or the part thereof in dispute), until such suit, claim, dispute or question has been finally disposed of, and Lessee shall have thirty (30) days after being furnished with a certified copy of the instrument or instruments disposing of such suit, claim, or dispute, or after being furnished with proof sufficient, in Lessee's opinion, to settle such question, within which to make payment. Should the right or interest of Lessee hereunder be disputed by Lessor, or any other person, the time covered by the pendency of such dispute shall not be counted against Lessee either as affecting the term of the lease or for any other purpose, and Lessee may suspend all payments without interest until there is a final adjudication or other determination. purpose, and Lessee may suspend all payments without interest until there is a final adjudication or other determination of such dispute.

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12. In case of cancellation or termination of this lease from any cause, Lessee shall have the right to retain, under the terms hereof, around each well producing, being worked on, or drilling hereunder, the number of acres in the form allocated to each such well under spacing and proration rules issued by the Commissioner of Conservation of the State of Louisiana, or any other State or Federal authority having control of such matters; or, in the absence of such rulings, forty (40) acres around each such well in as near a square form as practicable, and in the event Lessor considers that operations are not being conducted in compliance with this contract, Lessee shall be notified in writing of the facts relied upon as constituting a breach hereof and Lessee shall have sixty (60) days after receipt of such notice to comply with the obligations imposed by wirting of this instrument.

gations imposed by virtue of this instrument.

gations imposed by virtue of this instrument.

13. When drilling, reworking, production or other operations are delayed or interrupted by force majeure, that is, by storm, flood or other acts of God, fire, war, rebellion, insurrection, riot, strikes, differences with workmen, or failure of carriers to transport or furnish facilities for transportation, or as a result of some law, order, rule, regulation, requisition or necessity of the government, Federal or State, or as a result of any cause whatsoever beyond the control of the Lessee, the time of such delay or interruption shall not be counted against Lessee, anything in this lease to the contrary notwithstanding, but this lease shall be extended for a period of time equal to that during which Lessee is so prevented from conducting such drilling or reworking operations on, or producing oil, gas, casinghead gas, condensate or other minerals from, the premises; provided, this paragraph 13 shall not relieve Lessee from the necessity of either paying delay rentals or shut-in royalty as the case may be, during the primary term in order to continue this lease in force solely by force majeure, and during any period this lease is continued in force after its primary term solely by force maieure as herein provided. Lessee

royalty as the case may be, during the primary term in order to continue this lease in force solely by force majeure, and during any period this lease is continued in force after its primary term solely by force majeure as herein provided, Lessee shall pay to the owners of the royalty hereunder the shut-in royalty provided in paragraph 5 hereof, and in the manner therein provided, without regard to whether or not there is a producing well shut in, located on said land or on land with which the lease premises or any part thereof has been pooled.

14. It is expressly understood and agreed that the premises leased herein shall, for all the purposes of this lease, be considered and treated as owned in indivision by the Lessor and shall be developed and operated as one lease, and there shall be no obligation on the part of Lessee to offset wells on separate tracts into which the land covered by this lease may be now or hereafter divided by sale, or otherwise, or to furnish separate measuring or receiving tanks, and all rentals, royalties and other payments accruing hereunder shall be treated as an entirety and shall be divided among and paid to Lessor in the proportion that the acreage (mineral rights) owned by each bears to the entire leased acreage. Lessee may at any time or times pay or tender all rentals or other sums accruing hereunder to the joint credit of Lessor

sor in the proportion that the acreage (mineral rights) owned by each bears to the entire leased acreage. Lessee may at any time or times pay or tender all rentals or other sums accruing hereunder to the joint credit of Lessor.

15. Notwithstanding the death of any party Lessor, or his successor in interest, the payment or tender of rentals in the manner provided above shall be binding on the heirs, executors and administrators of such person.

16. Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the Lessee at its option shall have the right to redeem for Lessor, by payment, any mortgage, taxes or other liens on the above described lands, in the event of default of payment by Lessor, and be subrogated to the rights of the holder thereof. In case of payment of any such mortgage, taxes or other liens by Lessee, in addition to the right of subrogation herein granted, Lessee shall also have the right to retain any rentals or royalties which become due Lessor hereunder and to repay itself therefrom, and the retention of such rentals or royalties by Lessee shall have the same effect as if paid to the Lessor in whose behalf payment of any mortgage, taxes or other liens was made.

17. This lease shall be binding upon all who execute it, whether or not named in the body hereof as Lessor, and without regard to whether this same instrument, or any copy thereof, shall be executed by any other Lessor named above.

IN WITNESS WHEREOF this instrument is executed on the date first above written.

IN WITNESS WHEREOF this instrument is executed on the date first above to

WITNESSES:	ted on the tate inst above written,
Elvin Ja Harri	ROBERT G. VARNER SS# 429-42-5619
Amer A By Fell	ROBERT G. VARNER SS# 429-42-5619
Eleve & Harris	RUTH DEAN VARNER SS# 431-24-3067
South S	RUTH DEAN VARNER SS# 431-24-3067
Emphiny & Clause)	DAVID VARNER SS# 433-84-9051
The Same	IC E VARNER SS# 433-84-9051
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A Sund	TRANS-GULF PETROLEUM CORPORATION
	Hugh M. Sneed, President
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BATH- GRAM BATH'S FORM LOUISIANA SPEC. 14-BR1-2A-PX 10-65 484350

OIL, GAS AND MINERAL LEASE

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•	THIS ACREEMENT made this 5th day of May 19.85, between ROBERT G. VARNER and RUTH DEAN VARNER, husband and wife, resident of Natchitoches Parish, Louisiana, whoses mailing address is P. O. Box 699, Natchiothces, La. 71457 and JOE DAVID VARNER, husband of Sunny Lee Varner, acting herein with his separate property, residents of Natchiotches Parish, whoses mailing address is the same as above, and TRANS-GULF PETROLEUM CORPORATION, a Louisiana corporation, hereinafter represented by its Secretary-Treasurer, William J. SNeed, P. O. Box 5355, Bossier City, La. 7111-5355	
	lessor (whether one or more), and AJAX GAS CORPORATION, a Louisiana corporation lessee, WITNESSETH: 1. Lessor in consideration of One Hundred and no/100 & OVC Dollars (\$100,000 (WC), in hand paid, of the royalties herein provided, and of the agreement of Lessee herein contained, hereby grains, leases and lets exclusively unto Lessee for the purposes of investigating, exploring, prospecting, drilling and mixing for and producing oil, gas and all other minerals, laying pipe lines, building tanks, power stations, telephone lines, and other stations therefore on to produce, save, take care of, treat, transport and own said products and for dredging and maintaining canals, constructing roads and bridges, and building houses for its employees, and, in general, for all appliances, structures, equipment, servitudes and privileges which may be necessary, useful or convenient to or in connection with any such operations con-	
	ducted by Lessee thereon, or on any adjacent lands, the following described land in DeSoto Parish, Louisiana, to-wit: DESOTO PARISH, Section 34 and 35, Township 12 North, Range 11 West, containing 91.13 acres, more or less described as follows: Lot 2 of Section 34; East Half of the Northwest Quarter of the Northwest Quarter and the fractional part of the Southwest Quarter of the Northwest Quarter of Section 35. This lease is limited, however, in that it covers only thoses zones from the surface of the earth down to the base of the Paluxy zone or 3000 feet whichever is lesser.	e
	NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, whenever the fraction one-eighth (1/8) appears regarding royalty, it is hereby deemed changed Robert G Varner and Ruth Dean Varner Joe David Varner Trans-Gulf Petroleum Corporation 1/2 of 1/8 = .06250 RI	
	This lease also covers and includes battures, accretions and all other land owned by Lessor adjacent to the land particularly described above. For the purpose of calculating the rental payments hereunder provided for, said land is estimated to comprise. 91.13	

from said land and sold or used off the premises or for the extraction of gasoline or other products therefrom, the market value at the well of one-eighth of the gas so sold or used, provided that on gas sold at the wells the royalty shall be one-eighth of the amount realized from such sale; such gas, casinghead gas, residue gas, or gas of any other nature or description whatsoever, as may be disposed of for no consideration to Lessee, either through unavoidable waste or leakage, or in order to recover oil or other liquid hydrocarbons, or returned to the ground, shall not be deemed to have been sold or used either on or off the premises within the meaning of this paragraph 3 hereof; (c) on all other minerals mined and marketed, one-eighth, either in kind or value at the well or mine, at Lessee's election, except that on sulphur the royalty

shall be one dollar (\$1.00) per long ton.

4. If operations for drilling or mining are not commenced on said land or on land pooled therewith on or before one year from this date, this lease shall terminate as to both parties, unless on or before one year from this date Lessee shall pay or tender to the Lessor a rental of Ninety-One and 13/100--

DOLLARS (\$91.13 which shall cover the privilege of deferring commencement of such operations for a period of twelve (12) months. In like manner and upon like payments or tenders, annually, the commencement of said operations may be further deferred for successive periods of the same number of months, each during the primary term. Payment or tender may be made to the Lessor or to the credit of Lessor in.

at Shreveport, which bank, or any successor thereof shall continue to be agent for the Lessor, and Lessor's successors and assigns. If such bank (or any successor bank) shall fail, liquidate, or be succeeded by another bank, or for any reason fail or refuse to accept rental, Lessee shall not be held in default until thirty days after Lessor shall deliver to Lessee a recordable instrument, making provision for another method of payment, or tender, and any depository charge is a liability of the Lessor. The payment or tender of rental may be made by check or draft of Lessee, mailed or delivered to said bank of Lessor, on or before the rental paying date. The depth of the hole to which any well may be drilled hereunder in search of oil, gas or any other mineral shall be determined solely by Lessee. Lessee may at any time execute and deliver to Lessor or to the depository above named or place of record a release or releases covering any portion or portions of the above described premises and thereby surrender this lease as to such portion or portions and be relieved of all obligations as to the acreage surrendered, and thereafter the rentals payable hereunder shall be reduced in the proportion that the acreage covered hereby is reduced by said release or releases, but all lands so released shall remain subject to easements for rights of way necessary or convenient for Lessee's operations on the land retained by it

to easements for rights of way necessary or convenient for Lessec's operations on the land retained by it.

5. If Lessee obtains production of minerals on said land or on land with which the lease premises or any portion thereof has been pooled, and if, during the life of this lease either before or after the expiration of the primary term, all such production is shut in by reason of force majeure or the lack either of a market at the well or wells or of an available pipeline outlet in the field, this lease shall not terminate but shall continue in effect during such shut-in period as though production were actually being obtained on the premises within the meaning of paragraph 2 hereof, and, during the month of January of each year immediately succeeding any year in which a shut-in period occurred when all such production was so shut in, Lessee shall pay or tender, by check or draft of Lessee, to the royalty owners or to the royalty owners' credit in any depository bank named in this lease, as royalty, one-twelfth (1/12) of the amount of the delay rental provided for in paragraph 4 hereof for each full calendar month in the preceding calendar year that this lease was continued in force solely and exclusively by reason of the foregoing provisions of this paragraph. The owners of the royalty as of the date of such payment shall be entitled thereto in proportion to their ownership of the royalty. The provisions of this paragraph shall be recurring at all times during the life of this lease. Nothing in this paragraph contained shall abridge the right of Lessee to otherwise maintain this lease in force and effect under its other provisions, and for any part of a shut-in period that this lease is otherwise being maintained in force and effect no shut-in royalty shall be due.

8. This lesse will continue in full force and effect within or beyond the primary term as long as any mineral is pro-

6. This lease will continue in full force and effect within or beyond the primary term as long as any mineral is produced from said land hereunder or from land pooled therewith. If within the primary term and prior to discovery of oil, gas, sulphur or other mineral on said land or on land pooled therewith, Lessee should drill a dry hole or holes thereon or if gas, sulphur or other mineral on said land or on land pooled therewith, Lessee should drill a dry hole or holes thereon or if after discovery of oil, gas, sulphur or other mineral, the production thereof should cease from any cause, this lease shall not terminate if Lessee commences or resumes the payment or tender of rentals or commences drilling operations or reworking operations on or before the rental paying date next ensuing after the expiration of ninety days from date of completion of such dry hole or cessation of production. If at any time subsequent to ninety days prior to the beginning of the last year of the primary term Lessee should drill a dry hole otherwith, or production previously secured should cease from any cause, no rental payment or operations are necessary in order to keep the lease in force during the remainder of the primary term. If such dry hole or holes be completed or abandoned or such production cease within less than ninety days before the end of the primary term, this lease shall continue in force and effect for ninety days from such completion or abandonment or cessation of production. If at the expiration of the primary term or at the expiration of the ninety day period provided for in the preceding sentence, oil, gas, sulphur or other mineral is not being produced on said land or on land pooled therewith but Lessee is then engaged in drilling operations or reworking operations thereon, or if production previously secured should cease from any cause after the expiration of the primary term, this lease shall remain in force so long thereafter as Lessee either (a) is engaged in drilling operations or reworking operations with no cessation between operations or between such cessation of production and additional operations of more than ninety consecutive days; or (b) is producing oil, gas, sulphur or other mineral from said land hereunder or from land pooled therewith. If sulphur be encountered on said premises or on land pooled therewith this lease shall continue in force and eff

7. Lessee is hereby granted the right as to all or any part of the land described herein, without Lessor's joinder, to combine, pool, or unitize the acreage royalty or mineral interest covered by this lease, or any portion thereof, with any other land, lease or leases, royalty or mineral interests in or under any other tract or tracts of land in the vicinity thereof, whether owned by Lessee or some other person, or corporation so as to create, by the combination of such lands and leases, one or more operating units, provided that no one operating unit shall, in the case of gas, including condensate, embrace more than six hundred forty (640) acres, and in the case of oil, including casinghead gas, embrace more than forty (40) acres; and provided further, however, that if any spacing or other rules and regulations of the State or Federal Commission, Agency, or regulatory body having or claiming jurisdiction has heretofore or shall at any time hereafter prescribe a drilling or operating unit or spacing rule in the case of gas, including condensate, greater than six hundred forty (640) acres, or in the case of oil or casinghead gas greater than forty (40) acres, then the unit or units herein contemplated may have, or in the case of oil or casinghead gas greater than forty (40) acres, then the unit or units herein contemplated may have, or may be redesigned so as to have, as the case may be, the same surface content as, but not more than, the unit or the acreage in the spacing rule so prescribed. However, it is further specifically understood and agreed, anything herein to the contrary notwithstanding, that the Lessee shall have the right to, and the benefit of an acreage tolerance of ten per cent in excess of any drilling or operating unit authorized herein. In the event such operating unit or units is/are so created by Lessee, Lessor agrees to accept and shall receive out of the production or the proceeds from the production from such operating unit or units such portion of the operating unit or units such portion of the operating unit or units. erating unit or units, such portion of the one-eighth royalty specified herein as the number of acres (mineral acres) out of this lease placed in any such operating unit or units bears to the total number of acres included in such operating unit or this lease placed in any such operating unit or units bears to the total number of acres included in such operating unit or units. The commencement of a well, or the completion of a well to production of either oil, gas, casinghead gas, condensate, or other minerals on any portion of an operating unit in which all or any part of the land described herein is embraced, or production of oil, gas, casinghead gas, condensate, or other minerals therefrom shall have the same effect under the terms of this lease as if a well were commenced, completed or producing oil, gas, casinghead gas, condensate, or other minerals in paying quantities on the land embraced by this lease. Lessee shall execute in writing and file for record in the records of the Parish in which the lands herein leased are located, an instrument identifying or describing the pooled acreage, or an instrument supplemental thereto redesignating same, as the case may be. Either prior to the securing of production from any unit created under the authority hereinabove granted, or after cessation of production therefrom Lessee shall have the right to dissolve the unit so created, without Lessor's joinder or further consent, by executing in writing and placing of record in the Parish or Parishes in which the lands making up such unit may be located, an instrument identifying and dissolving such unit. The provisions hereof shall be construed as a covenant running with the land and shall inure to the benefit of and be binding upon the parties hereto, their heirs, representatives, successors and assigns.

8. If Lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided shall be paid to Lessor only in the proportion which Lessor's interest bears to the whole and undivided fee.

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9. Lessee shall have free use of oil, gas, casinghead gas, condensate, coal and water from said land, except water from Lessor's wells, for all operations hereunder, including repressuring, pressure maintenance and recycling, and the royalty shall be computed after deducting any so used. Lessee shall have the right at any time during or after the expiration of this lease to remove all property and fixtures placed by Lessee on said land, including the right to draw and remove all casing. When required by Lessor, Lessee will bury all pipe lines below ordinary plow depth, and no well shall be drilled within two hundred feet of any residence or barn now on said land, without Lessor's consent. In the event a well or wells, producing oil, gas, casinghead gas or condensate in paying quantities should be brought in on adjacent lands not owned by the Lessor and within one hundred fifty feet of and draining the leased premises, Lessee agrees to drill such offset well or wells as a reasonably prudent operator would drill under the same or similar circumstances.

10. The rights of either party hereunder may be assigned in whole or in part and the provisions hereof shall extend to the heirs, executors, administrators, successors and assigns, but no change or division in ownership of the land, rentals, or royalties, however accomplished shall operate to enlarge the obligations or diminish the rights of Lessee. No such change or division in the ownership of the land, rentals or royalties shall be binding upon Lessee for any purpose until such person acquiring any interest has furnished Lessee, at its principal place of business, with a certified copy of the instrument or instruments, constituting his chain of title from the original Lessor. In the event of an assignment of this lease as to a segregated portion of said land, or as to an undivided interest therein, the rentals payable hereunder shall be apas to a segregated portion of said land, or as to an undivided interest therein, the rentals payable hereunder shall be apportioned as between the several leasehold owners ratably according to the surface area of each, or according to the undivided interest of each, and default in rental payment by one shall not affect the rights of other leasehold tweets hereunder. An assignment of this lease, in whole or in part, shall, to the extent of such assignment, relieve and discharge Lessee of any obligations hereunder and, if Lessee or assignee of part or parts hereof shall fail or make default in the payment of the proportionate part of the rentals due from such Lessee, or assignee, or fail to comply with any other provisions of the lease, such default shall not affect this lease insofar as it covers a part of said lands upon which Lessee or any assignee thereof shall make payment of said rentals thereof shall make payment of said rentals.

11. In case of suit, adverse claim, dispute or question as to the ownership of the rentals or royalties (or some part thereof) payable under this lease, Lessee shall not be held in default in payment of such rentals or royalties (or the part thereof in dispute), until such suit, claim, dispute or question has been finally disposed of, and Lessee shall have thirty (30) days after being furnished with a certified copy of the instrument or instruments disposing of such suit, claim, or dispute, or after being furnished with proof sufficient, in Lessee's opinion, to settle such question, within which to make payment. Should the right or interest of Lessee hereunder be disputed by Lessor, or any other person, the time covered by the pendency of such dispute shall not be counted against Lessee either as affecting the term of the lease or for any other purpose, and Lessee may suspend all payments without interest until there is a final adjudication or other determination of such dispute.

12. In case of cancellation or termination of this lease from any cause, Lessee shall have the right to retain, under the terms hereof, around each well producing, being worked on, or drilling hereunder, the number of acres in the form allocated to each such well under spacing and proration rules issued by the Commissioner of Conservation of the State of Louisiana, or any other State or Federal authority having control of such matters; or, in the absence of such rulings, forty (40) acres around each such well in as near a square form as practicable, and in the event Lessor considers that operations are not being conducted in compliance with this contract, Lessee shall be notified in writing of the facts relied upon as constituting a breach hereof and Lessee shall have sixty (60) days after receipt of such notice to comply with the obligations imposed by virtue of this instrument.

13. When drilling, reworking, production or other operations are delayed or interrupted by force majeure, that is, by storm, flood or other acts of God, fire, war, rebellion, insurrection, riot, strikes, differences with workmen, or failure of carriers to transport or furnish facilities for transportation, or as a result of some law, order, rule, regulation, requisition or necessity of the government, Federal or State, or as a result of any cause whatsoever beyond the control of the Lessee, the necessity of the government, Federal or State, or as a result of any cause whatsoever beyond the control of the Lessee, the time of such delay or interruption shall not be counted against Lessee, anything in this lease to the contrary notwithstanding, but this lease shall be extended for a period of time equal to that during which Lessee is so prevented from conducting such drilling or reworking operations on, or producing oil, gas, casinghead gas, condensate or other minerals from, the premises; provided, this paragraph 13 shall not relieve Lessee from the necessity of either paying delay rentals or shut-in royalty as the case may be, during the primary term in order to continue this lease in force solely by force majeure, and during any period this lease is continued in force after its primary term solely by force majeure as herein provided, Lessee shall pay to the owners of the royalty hereunder the shut-in royalty provided in paragraph 5 hereof, and in the manner therein provided, without regard to whether or not there is a producing well shut in, located on said land or on land with which the lease premises or any part thereof has been pooled.

14. It is expressly understood and agreed that the premises leased herein shall, for all the purposes of this lease, be considered and treated as owned in indivision by the Lessor and shall be developed and operated as one lease, and there shall be no obligation on the part of Lessee to offset wells on separate tracts into which the land covered by this lease may be now or hereafter divided by sale, or otherwise, or to furnish separate measuring or receiving tanks, and all rentals, royalties and other payments accruing hereunder shall be treated as an entirety and shall be divided among and paid to Lessor in the proportion that the acreage (mineral rights) owned by each bears to the entire leased acreage. Lessee may at any time or times pay or tender all rentals or other sums accruing hereunder to the joint credit of Lessor.

any time or times pay or tender all rentals or other sums accruing hereunder to the joint credit of Lessor.

15. Notwithstanding the death of any party Lessor, or his successor in interest, the payment or tender of rentals in the manner provided above shall be binding on the heirs, executors and administrators of such person.

16. Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the Lessee at its option shall have the right to redeem for Lessor, by payment, any mortrage, taxes or other liens on the characteristics. at its option shall have the right to redeem for Lessor, by payment, any mortgage, taxes or other liens on the above described lands, in the event of default of payment by Lessor, and be subrogated to the rights of the holder thereof. In case of payment of any such mortgage, taxes or other liens by Lessee, in addition to the right of subrogation herein granted, Lessee shall also have the right to retain any rentals or royalties which become due Lessor hereunder and to repay itself therefrom, and the retention of such rentals or royalties by Lessee shall have the same effect as if paid to the Lessor in whose behalf payment of any mortgage, taxes or other liens was made.

17. This lease shall be binding upon all who execute it, whether or not named in the body hereof as Lessor, and without regard to whether this same instrument, or any copy thereof, shall be executed by any other Lessor named above.

IN WITNESS WHEREOF, this instrument is executed on the date first above written. WITNESSES: SS# 429-42-5619 RUTH DEAN SS# 431-24-3067 JOE DAVID VARNER SS# 433-84-9051 -GULF PETROLEUM CORPORATION William J. Sneed Secretary-Treasurer

Parish of	
	day of, before me personally appeared
ame asfree act and deed.	and who executed the foregoing instrument, and acknowledged thatheexecuted the
	Notary Public in and forParish, Louisiana.
TATE OF LOUISIANA PARISH OF Bossier	
o me personally known to be the identical personally sworn, onsu	on whose name is subscribed to the foregoing instrument as an attesting witness, who being firs ubscribedname to the foregoing instrument as a witness, and that he knowsarner and Willaim J. Sneed, Secretary-Treasure of ton and Ruth Dean VArner
the same as <u>their</u> voluntary act and dees subscribed name to the same at the same times Sworn to and subscribed before me, this	the identical person_described therein, and who executed the same, and saw_themsigned, and that, the said_Rudolph C. Hines & Helen Sherrill me as an attesting witness.
Notary Public in and for Bossier Pari WILNA SIREM SERVIC VALUATION OF PUBLIC PROPERTY VALUE OF THE LANGE AND COMMISSIONS IN PART (MR. LANGE)	sh, La.
OIL, GAS AND MINERAL LEASE FROM TO	Parish of SATH STORM LOUISIANA SPEC. 14-BR1-2A-PX 10-65
duly sworn, onoath, says: Thats	son whose name is subscribed to the foregoing instrument as an attesting witness, who being fire subscribedname to the foregoing instrument as a witness, and thatknows
the Grantor_named in said instrument, to be the same asvoluntary act and de subscribedname to the same at the same t	
Sworn to and subscribed before me, this day of	

OIL, GAS AND MINERAL LEASE

5th day of May , 19<u>85</u>, between THIS AGREEMENT made this___

ROBERT G. VARNER AND RUTH DEAN VARNER, husband and wife, resident of Natchitoches Parish,

Louisiana, whoses mailing address is P. O. Box 699, Natchitoches, La. 71457 and JOE DAVID VARNER, husband of Sunny Lee Varner, acting herein with his separate property,

residents of Natchitoches, Parish, whoses mailing address is the same as above, and TRANS-GULF PETROLEUM CORPORATION, a Louisiana corporation, hereinafter represented by the Secretary-Treasurer, William J. Sneed, P. O. Box 5355, Bossier City, Duistana 9871-5355.

lessor (whether one or more), and AJAX GAS CORPORATION, a Louisiana corporation lessee, WITNESSETH:

lessee, WITNESSETH:

1. Lessor in consideration of One Hundred and no/100 & OVC

Dollars \$ 106700 & FOVC), in hand paid, of the royalties herein provided, and of the agreement of Lessee herein contained, hereby grants, leases and lets exclusively unto Lessee for the purposes of investigating, exploring, prospecting, drilling and mining for and producing oil, gas and all other minerals, laying pipe lines, building tanks, power stations, telephone lines, and other structures thereon to produce, save, take care of, treat, transport and own said products and for dredging and maintaining canals, constructing roads and bridges, and building houses for its employees, and, in general, for all appliances, structures, equipment, servitudes and privileges which may be necessary, useful or convenient to or in connection with any such operations conservitudes and privileges which may be necessary, useful or convenient to or in connection with any such operations con-

ducted by Lessee thereon, or on any adjacent lands, the following described land in DeSoto Parish Louisiana, to-wit:

DESOTO PARISH, Section 26 and 35 of Township 12 North, Range 11 West, containing 141.01 acres, more or less described as follows:

Sixteen acres off of the South side of Lot 3 of Joseph King Partition of April 30, 1892, conveyance Book 5 at page 592 of Section 26; and Lot 3, 4, 5 of Section 35.

THIS LEASE is limited, however, in that it covers only thoses zones from the surface of the earth down to the base of the Paluxy zone or 3000 feet whichever is lesser.

NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, whenever the fraction one-eighth (1/8) appears regarding royalty, it is hereby deemed changed

ROBERT G. VARNER and RUTH DEAN VARNER

1/4 of 1/8 = .03125 RI

JOE DAVID VARNER

1/4 of 1/8 = .03125 RI

TRANS-GULF PETROLEUM CORPORATION

1/2 of 1/8 = .06250 RI

This lease also covers and includes battures, accretions and all other land owned by Lessor adjacent to the land particularly described above. For the purpose of calculating the rental payments hereunder provided for, said land is esti-

mated to comprise 141.01 acres, whether it actually comprises more or less.

2. Subject to the other provisions herein contained, this lease shall be for a period of ten years from this date (called "primary term") and as long thereafter as (1) oil, gas, sulphur or other mineral is produced from said land hereunder or from land pooled therewith; or (2) it is maintained in force in any other manner herein provided.

(a) It is the intention of the parties that this lease shall also extend and apply to all outstanding mineral rights or servitudes affecting the lands herein described as the same may revert to Lessor, his heirs or assigns, from time to time.

3. The royalties to be paid by Lessee are: (a) on oil, and other hydrocarbons which are produced at the well in liquid form by ordinary production methods, one-eighth of that produced and saved from said land, same to be delivered at the wells or to the credit of Lessor in the pipe line to which the wells may be connected; Lessor's interest in either case to bear its proportion of any expenses for treating the oil to make it marketable as crude; Lessee may from time to time purchase any royalty oil or other liquid hydrocarbons in its possession, paying the market price therefor prevailing for the field where produced on the date of purchase; (b) on gas, including casinghead gas, or other gaseous substance produced from said land and sold or used off the premises or for the extraction of gasoline or other products therefrom, the market value at the well of one-eighth of the gas so sold or used, provided that on gas sold at the wells the royalty shall be one-eighth of the amount realized from such sale; such gas casinghead gas, or gas of any other nature or described the royalty shall be one-eighth of the amount realized from such sale; such gas casinghead gas, or gas of any other nature or described the royalty shall be one-eighth of the amount realized from such sale; such gas casinghead gas, or gas of any other nature or described the royalty shall be one-eighth of the gas casinghead gas, or gas of any other nature or described the royalty shall be one-eighth of the gas casinghead gas. eighth of the amount realized from such sale; such gas, casinghead gas, residue gas, or gas of any other nature or description whatsoever, as may be disposed of for no consideration to Lessee, either through unavoidable waste or leakage, or in order to recover oil or other liquid hydrocarbons, or returned to the ground, shall not be deemed to have been sold or used either on or off the premises within the meaning of this paragraph 3 hereof; (c) on all other minerals mined and marketed, one-eighth, either in kind or value at the well or mine, at Lessee's election, except that on sulphur the royalty shall be one dollar (\$1.00) per long ton.

4. If operations for drilling or mining are not commenced on said land or on land pooled therewith on or before one year from this date, this lease shall terminate as to both parties, unless on or before one year from this date Lessee shall

pay or tender to the Lessor a rental of One Hundred Forty-One and p1/100-

DOLLARS (<u>\$ 141.01</u> which shall cover the privilege of deferring commencement of such operations for a period of twelve (12) months. In like manner and upon like payments or tenders, annually, the commencement of said operations may be further deferred for successive periods of the same number of months, each during the primary term. Payment or tender may be made to the

Lessor or to the credit of Lessor in American Bank & Trust

Shreveport at Shreveport, which bank, or any successor thereof shall continue to be agent for the Lessor, and Lessor's successors and assigns. If such bank (or any successor bank) shall fail, liquidate, or be succeeded by another bank, or for any reason fail or refuse to accept rental, Lessee shall not be held in default until thirty days after Lessor shall deliver to Lessee a recordable instrument, making provision for another method of payment, or tender, and any depository charge is a liability of the Lessor. The payment or tender of rental may be made by check or draft of Lessee, mailed or delivered to said bank of Lessor, on or before the rental paying date. The depth of the hole to which any well may be drilled hereunder in search of oil, gas or any other mineral shall be determined solely by Lessee. Lessee may at any time execute and deliver to Lessor or to the depository above named or place of record a release or releases covering any portion or portions of the above described premises and thereby surrender this lease as to such portion or portions and be relieved of all obligations as to the acreage surrendered, and thereafter the rentals payable hereunder shall be reduced in the proportion that the acreage covered hereby is reduced by said release or releases, but all lands so released shall remain subject to easements for rights of way necessary or convenient for Lessec's operations on the land retained by it.

5. If Lessee obtains production of minerals on said land or on land with which the lease premises or any portion thereof has been pooled, and if, during the life of this lease either before or after the expiration of the primary term, all such production is shut in by reason of force majeure or the lack either of a market at the well or wells or of an available pipeline outlet in the field, this lease shall not terminate but shall continue in effect during such shut-in period as though production were actually being obtained on the premises within the meaning of paragraph 2 hereof, and, during the

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month of January of each year immediately succeeding any year in which a shut-in period occurred when all such production was so shut in, Lessee shall pay or tender, by check or draft of Lessee, to the royalty owners or to the royalty owners' credit in any depository bank named in this lease, as royalty, one-twelfth (1/12) of the amount of the delay rental provided for in paragraph 4 hereof for each full calendar month in the preceding calendar year that this lease was continued in force solely and exclusively by reason of the foregoing provisions of this paragraph. The owners of the royalty as of the date of such payment shall be entitled thereto in proportion to their ownership of the royalty. The provisions of this paragraph shall be recurring at all times during the life of this lease. Nothing in this paragraph contained shall abridge the right of Lessee to otherwise maintain this lease in force and effect under its other provisions, and for any part of a shut-in period that this lease is otherwise being maintained in force and effect no shut-in royalty shall be due.

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6. This lease will continue in full force and effect within or beyond the primary term as long as any mineral is produced from said land hereunder or from land pooled therewith. If within the primary term and prior to discovery of oil, gas, sulphur or other mineral, the production thereof should cease from any cause, this lease shall not terminate if Lessee commences or resumes the payment or tender of rentals or commences drilling operations or reworking operations on or before the rental paying date next ensuing after the expiration of ninety days from date of completion of such dry hole or cessation of production. If at any time subsequent to ninety days prior to the beginning of the last year of the primary term Lessee should drill a dry hole thereon or on land pooled therewith, or production previously secured should cease from any cause, no rental payment or operations are necessary in order to keep the lease in force during the remainder of the primary term. If such dry hole or holes be completed or abandoned or such production cease within less than ninety days before the end of the primary term, this lease shall continue in force and effect for ninety days from such completion or abandonment or cessation of production. If at the expiration of the primary term, this lease shall rentine in force and effect for ninety days from such completion or abandonment or cessation of production. If at the expiration of the primary term, this lease shall rentine in force and effect for ninety days from such production previously secured should cease from any cause after the expiration of the primary term, this lease shall remain in force so long thereafter as Lessee either (a) is engaged in drilling operations or reworking operations with no cessation between operations or between such

whether owned by Lessee or some other person, or corporation so as to create, by the combination of such lands and leases, one or more operating units, provided that no one operating unit shall, in the case of gas, including condensate, embrace more than six hundred forty (640) acres, and in the case of oil, including casinghead gas, embrace more than forty (40) acres; and provided further, however, that if any spacing or other rules and regulations of the State or Federal Commission, Agency, or regulatory body having or claiming jurisdiction has heretofore or shall at any time hereafter prescribe a drilling or operating unit or spacing rule in the case of gas, including condensate, greater than six hundred forty (640) acres, or in the case of oil or casinghead gas greater than forty (40) acres, then the unit or units herein contemplated may have, or may be redesigned so as to have, as the case may be, the same surface content as, but not more than, the unit or the acreage in the spacing rule so prescribed. However, it is further specifically understood and agreed, anything herein to the contrary notwithstanding, that the Lessee shall have the right to, and the benefit of an acreage tolerance of ten per cent in excess of any drilling or operating unit authorized herein. In the event such operating unit or units is/are so created by Lessee, Lessor agrees to accept and shall receive out of the production or the production from such operating unit or units, such portion of the one-eighth royalty specified herein as the number of acres (mineral acres) out of this lease placed in any such operating unit or units bears to the total number of acres included in such operating unit or units. The commencement of a well or the completion of a well to production of either oil gas, casinghead gas, condenselved. units. The commencement of a well, or the completion of a well to production of either oil, gas, casinghead gas, condensate, or other minerals on any portion of an operating unit in which all or any part of the land described herein is embraced, or production of oil, gas, casinghead gas, condensate, or other minerals therefrom shall have the same effect under the terms of this lease as if a well were commenced, completed or producing oil, gas, casinghead gas, condensate, or other minerals in paying quantities on the land embraced by this lease. Lessee shall execute in writing and file for record in the records of the Parish in which the lands herein leased are located, an instrument identifying or describing the pooled correage, or an instrument supplemental thereto redesignating same, as the case may be Fither prior to the correging of prorecords of the Parish in which the lands herein leased are located, an instrument identifying of describing the pooled acreage, or an instrument supplemental thereto redesignating same, as the case may be. Either prior to the securing of production from any unit created under the authority hereinabove granted, or after cessation of production therefrom Lessee shall have the right to dissolve the unit so created, without Lessor's joinder or further consent, by executing in writing and placing of record in the Parish or Parishes in which the lands making up such unit may be located, an instrument identifying and dissolving such unit. The provisions hereof shall be construed as a covenant running with the land and shall inure

to the benefit of and be binding upon the parties hereto, their heirs, representatives, successors and assigns.

8. If Lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties and rentals herein provided shall be paid to Lessor only in the proportion which Lessor's interest

bears to the whole and undivided fee.

9. Lessee shall have free use of oil, gas, casinghead gas, condensate, coal and water from said land, except water 9. Lessee shall have free use of oil, gas, casinghead gas, condensate, coal and water from said land, except water from Lessor's wells, for all operations hereunder, including repressuring, pressure maintenance and recycling, and the royalty shall be computed after deducting any so used. Lessee shall have the right at any time during or after the expiration of this lease to remove all property and fixtures placed by Lessee on said land, including the right to draw and remove all casing. When required by Lessor, Lessee will bury all pipe lines below ordinary plow depth, and no well shall be drilled within two hundred feet of any residence or barn now on said land, without Lessor's consent. In the event a well or wells, producing oil, gas, casinghead gas or condensate in paying quantities should be brought in on adjacent lands not owned by the Lessor and within one hundred fifty feet of and draining the leased premises, Lessee agrees to drill such offset well or wells as a reasonably prudent operator would drill under the same or similar circumstances.

or wells as a reasonably prudent operator would drill under the same or similar circumstances.

10. The rights of either party hereunder may be assigned in whole or in part and the provisions hereof shall extend to the heirs, executors, administrators, successors and assigns, but no change or division in ownership of the land, rentals, or royalties, however accomplished shall operate to enlarge the obligations or diminish the rights of Lessee. No such change or division in the ownership of the land, rentals or royalties shall be binding upon Lessee for any purpose until such person acquiring any interest has furnished Lessee, at its principal place of business, with a certified copy of the instrument or instruments, constituting his chain of title from the original Lessor. In the event of an assignment of this lease as to a segregated portion of said land, or as to an undivided interest therein, the rentals payable hereunder shall be apportioned as between the several leasehold owners ratably according to the surface area of each, or according to the undivided interest of each, and default in rental payment by one shall not affect the rights of other leasehold owners hereunder. An assignment of this lease, in whole or in part, shall, to the extent of such assignment, relieve and discharge Lessee of any obligations hereunder and, if Lessee or assignee of part or parts hereof shall fail or make default in the payment of the proportionate part of the rentals due from such Lessee, or assignee, or fail to comply with any other provisions of the lease, such default shall not affect this lease insofar as it covers a part of said lands upon which Lessee or any assignee thereof shall make payment of said rentals.

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11. In case of suit, adverse claim, dispute or question as to the ownership of the rentals or royalties (or some part thereof) payable under this lease, Lessee shall not be held in default in payment of such rentals or royalties (or the part thereof in dispute), until such suit, claim, dispute or question has been finally disposed of, and Lessee shall have thirty (30) days after being furnished with a certified copy of the instrument or instruments disposing of such suit, claim, or dispute, or after being furnished with proof sufficient, in Lessee's opinion, to settle such question, within which to make payment. Should the right or interest of Lessee hereunder be disputed by Lessor, or any other person, the time covered by the pendency of such dispute shall not be counted against Lessee either as affecting the term of the lease or for any other purpose, and Lessee may suspend all payments without interest until there is a final adjudication or other determination of such dispute.

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13. When drilling, reworking, production or other operations are delayed or interrupted by force majeure, that is, by storm, flood or other acts of God, fire, war, rebellion, insurrection, riot, strikes, differences with workmen, or failure of carriers to transport or furnish facilities for transportation, or as a result of some law, order, rule, regulation, requisition or necessity of the government, Federal or State, or as a result of any cause whatsoever beyond the control of the Lessee, the time of such delay or interruption shall not be counted against Lessee, anything in this lease to the contrary notwithstanding, but this lease shall be extended for a period of time equal to that during which Lessee is so prevented from conducting such drilling or reworking operations on, or producing oil, gas, casinghead gas, condensate or other minerals from, the premises; provided, this paragraph 13 shall not relieve Lessee from the necessity of either paying delay rentals or shut-in royalty as the case may be, during the primary term in order to continue this lease in force solely by force majeure, and during any period this lease is continued in force after its primary term solely by force majeure as herein provided, Lessee shall pay to the owners of the royalty hereunder the shut-in royalty provided in paragraph 5 hereof, and in the manner therein provided, without regard to whether or not there is a producing well shut in, located on said land or on land with which the lease premises or any part thereof has been pooled.

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16. Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the Lessee at its option shall have the right to redeem for Lessor, by payment, any mortgage, taxes or other liens on the above described lands, in the event of default of payment by Lessor, and be subrogated to the rights of the holder thereof. In case of payment of any such mortgage, taxes or other liens by Lessee, in addition to the right of subrogation herein granted, Lessee shall also have the right to retain any rentals or royalties which become due Lessor hereunder and to repay itself therefrom, and the retention of such rentals or royalties by Lessee shall have the same effect as if paid to the Lessor in whose behalf payment of any mortgage, taxes or other liens was made.

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without regard to whether this same instrument, or any co	by thereof, shall be executed by any	other Lessor named above.
IN WITNESS WHEREOF, this instrument is execu		
WITNESSES:		
Helen Shewill	Boket DI	60 MM
Truballe C. Hime	ROBERT G. VARNER	SS# 429-42-5619
Delan Shenell	Jamie Ruth Dean H	Erue
Toutald G. Herris	RUTH DEAN VARNER	SS# 431-24-3067
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On this	STATE OF LOUISIANA	}
to me known to be the person	Parish of)
to me known to be the persondescribed in and who executed the foregoing instrument, and acknowledged thatheexecuted the same asfree act and deed. In WITNESS WHEREOF I have hereunto set my official hand and seal on the date hereinabove written. Notary Public in and for	On thisday of	of, 19, before me personally appeared
STATE OF LOUISIANA PARISH OF. Rossier. BEFORE ME, the undersigned authority, this day personally appeared. The undersigned to me personally known to be the kientical person whose name is subscribed to the foregoing instrument as an attenting winess, who being first duly sworn, con. coath, says: Intmbernedname to the foregoing instrument as an witness, and thatknows. Robert G, Varner, Joe David Varner and William J. Sneed, Secretary-Treasure of	,	
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STATE OF LOUISIANA PARISH OF Rogsier BEFORE ME, the understgued authority, this day personally appeared the undersigned to me personally known to be the identical person whose name is subscribed to the foregoing instrument as an attesting witness, who being first duly sworn, onouth, says: Thatubscribedname to the foregoing instrument as an attesting witness, who being first duly sworn, onouth, says: Thatubscribedname to the foregoing instrument as an attesting witness, who being first duly sworn, onouth, says: Thatubscribedname to the same as dult and thatubscribedsecretary-Treasure of		
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BEFORE ME, the undersigned authority, this day personally appeared. The undersigned to me personally known to be the identical person whose name is subscribed to the foregoing instrument as an attesting witness, who being first duly sworn, on	STATE OF LOUISIANA)
BEFORE ME, the undersigned authority, this day personally appeared. The undersigned to me personally known to be the identical person whose name is subscribed to the foregoing instrument as an attesting witness, who being first duly sworn, on	PARISH OFBossier	, .
and sworn, onouth, says: Thatunbestrhedname to the foregoing instrument as a witness, and thatknows		day personally appeared the undersigned
Trans-Gulf Petroleum Corporation and Ruth Dean Varner the Grantor_named in said instrument, to be the identical person_described therein, and who executed the same, and saw_themsign the same astheat_voluntary act and deed, and that, the saidRudolph C. Hines 6 Helen Sherrill1 subscribedname to the same at the same time as an attesting witness. Swom to and subscribed before me, this 5th day of		
Trans-Gulf Petroleum Corporation and Ruth Dean Varner the Grantor_named in said instrument, to be the identical person_described therein, and who executed the same, and saw_themsign the same astheat_voluntary act and deed, and that, the saidRudolph C. Hines 6 Helen Sherrill1 subscribedname to the same at the same time as an attesting witness. Swom to and subscribed before me, this 5th day of	duly sworm, onoath, says: Thatsubscrib Robert G. Varner. Joe David Varner	edname to the foregoing instrument as a witness, and thatknows and William J. Sneed, Secretary-Treasure of
the Grantor_named in said instrument, to be the identical person_described therein, and who executed the same, and saw themsign the same astheirvaluation and content of the same at the same time as an attesting witness. Swom to and subscribed before me, this	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
the same as		_
Sworn to and subscribed before me, this 5th day of May 1985 Notary Public in and in Bossier Parish. La. Notary Public in and in an in		w 4 # 1 A *** 4 A ** 1 A *** 111
Notary Public in and for Bossier Parish. La. Notary Public in and for Bossier Parish. La. B		
Notary Public in and for the public publish and the public		
Notary Public in and for the public publish and the public	day of May	199 Culary C. Him
STATE OF LOUISIANA PARISH OF	Notary Public in and for Bossier Parish.	La.
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Parish of Parish OF Description Parish OF Description Description	giv Gesantonian in Ang. Mile	
PARISH OF	OIL, GAS AND MINERAL LEASE FROM TO	H'S FORM LOUISIANA SPEC. 14:BR1-2A-PX
BEFORE ME, the undersigned authority, this day personally appeared	PARISH OF	dentical person_described therein, and who executed the same, and sawsign at that, the said, the said

	77	3
Federal Land Bank of Jackson, In Receivership	No. ——— 49.795	
Versus	STATE OF LOUISIANA	
William T. Dugan and Martha Outlaw Dugan	ELEVENTH JUDICIAL DISTRICT PARISH OF DESOTO	
WHEREAS, I, Floyd E. Lambert	, Sheriff and Ex-Officio Auctioneer, of the	Parish
of DeSoto, by virtue of Writ of Seizure and Sale Honorable, The Eleventh Judicial District Court, in and for blied with all the legal requirements, did seize and take into no ogether with all tof the buildings and improvements thereon	ny nosession the tellering described by	com- perty,
Lots 1 and 2 of Section 34; Northwest q Fractional Southwest quarter of Northwe of Section 35; Lot 4 and 16 acres off t King Partition, as per Book 5, page 592 DeSoto Parish, Louisiana, and otherwise the South 7 chains of Lot 2 of Section Range 11 West, containing 363.96 acres,	st quarter and Lots 3, 4 and 5 he South side of Lot 3 of Jos. , of the Conveyance Records of described as all of Lot 5 and 26, all in Township 12 North	244.040
nd whereas, I gave due notice of the sale of said property, as	follows: TO-WIT: On the 16th with	/
ay of November 19 89, by adve take place at the principal front door of the CXXXXXIX Sheriff wednesday, the 20th day of which said advertisement was inserted and public	rtisement in the English language and noting however, in the City of Mansfield, Perish of December, 1989	ne sale o, on
And at said time and place, within the legal horand after the writ, the advertisement and the mannexed to and made aprt hereof by reference), ing with all requirements of law, I exposed said for CASH, according to law, and at said offering with all requirements of law, and at said offering with all requirements of law, and at said offering with a coording to law, and at said offering with said property, the sum ofOne Hundred Forty The sum being the highest and best bid, the said above described.	ortgage certificate (a copy of which is been read aloud by me, and after complete property for sale at Public Auctions of Federal Land Bank of Jackson In Receivership P.O. Box 14167 Jackson, MS 39236-4167 housand and no/100 (\$140,000.00)	i., .s .y- on,
Federal Land Bank of Jackson, In Receivership		
NOW THEREFORE, KNOW ALL MEN BY THESE PRESEN Sheriff of the Parish of DeSoto, in consideration of the presents made and provided, do SELL AND TRANSFER the sa	mises, and by virtue of the laws of the State ir	
nd all the rights and title which the said William T. Du	gan and Martha Outlaw Dugan	
ad in or to the said described property, to have and to hold the	ne same to the said VENDEE, Heirs and Assigns Fo	orever
IN WITNESS WHEREOF, I have hereunto signed my	name, at Mansfield, in the Parish of DeSoto, St	ate of
Louisiana, this 20th day	of December, 1989	_
Signed in the presence of archy M. Davis	Floyd E. Lambert eggy A. Sheriff and Ex-Officio Auctioneer,	KSÕ
Hith Salter "	DeSoto Parish, Louisiana	

516320

QUITCLAIM

BY

Jun 12 11 13 AM 1990 Jones Com BK (655 50)

BOP NUMBER: 228976-71

UNITED STATES OF AMERICA

STATE OF MISSISSIPPI

FEDERAL LAND BANK OF JACKSON IN RECEIVERSHIP

COUNTY OF MADISON

TO

FARM CREDIT BANK OF TEXAS

BE IT KNOWN, that on the date hereinafter set forth, but effective June 5, 1990 before the undersigned Notary Public duly commissioned and qualified in and for the State and County hereinafter set forth, and in the presence of the undersigned competent witnesses,

PERSONALLY CAME AND APPEARED:

FEDERAL LAND BANK OF JACKSON IN RECEIVERSHIP, a corporation and federal instrumentality, 1800 East County Line Road, Ridgeland, Mississippi 39157, acting by and through REW Mississippi 39157, acting by and through KEW ENTERPRISES, INC., duly appointed Receiver thereof, pursuant to and by virtue of that certain Order of the Farm Credit Administration dated May 20, 1988, herein represented by its undersigned officer, duly authorized per resolution of its Board of Directors, a certified copy of which is annexed ("Vendor")

who declares that Vendor does by these presents, hereby quitclaim, transfer, convey and deliver without any warranty of title whatsoever, even as to Vendor's own acts and even as to the return or reduction of the purchase price of any portion thereof, but with full substitutions and subrogation in and to all the rights and actions of warranty which Vendor has or may have against all preceding owners and vendors unto:

FARM CREDIT BANK OF TEXAS, a corporation and federal instrumentality, Post Office Box 15919, Austin, Texas 78761, ("Purchaser"),

and unto Purchaser's successors and assigns, Vendor's right, title and interest, if any, and whatsoever, in and to the property ("Property") specifically described on Exhibit "A" as attached hereto, and made a part hereof.

To have and to hold the Property unto Purchaser, and Purchaser's successors and assigns is revert.

The Property is being sold to Purchaser "as is" and "where is". Purchaser, by Purchaser's recordation of this Quitclaim, acknowledges that Purchaser has relied solely on Purchaser's own title examination and inspection of the Property and not on any warranties or representations from Vendor and tat all implied warranties with respect to the Property, including those related to merchantability or fitness for a particular purpose, are disclaimed by Vendor and expressly waived by Purchaser.

Further, Purchaser, by Purchaser's recordation of this Quitclaim, acknowledges that (i) Vendor does not warranty that the Property is free from redhibitory or latent defects or vices and/or

that the Property is suitable or fit for any purpose: (ii) to the fullest extent permitted by law, Purchaser releases Vendor of any liability for redhibitory or latent defects or vices and from any warranty regarding the fitness or suitability of the Property including, but not limited to, any liability under La. C.C. Art. 2520-2548; (iii) Purchaser waives the warranty of fitness for intended purpose and of guarantee against hidden or latent redhibitory vices under Louisiana law, including La. C.C. Art. 2520-2548, and that warranty imposed by La. C.C. Art. 2476; (iv) this express waiver is and shall be considered a material and integral part of this sale and the considered thereof. (v) this integral part of this sale and the consideration thereof; (v) this waiver has been brought to the attention of Purchaser and explained in detail; and (vi) Purchaser has voluntarily and knowingly consented to this waiver of warranty of fitness and/or warranty against redhibitory vices and defects for the herein conveyed Property.

This Quitclaim is made and accepted for and in consideration of the purchase price of \$ 233,000.00 , the receipt and adequacy of which are hereby acknowledged by Vendor.

Purchaser, by Purchaser's recordation of this Quitclaim, and Vendor waive and dispense with the production of any and all certificates and/or researches required by law and relieve and release me, Notary, and my surety on my notarial bond from any and all liability and/or responsibility for the nonproduction thereof.

THUS DONE AND PASSED, before the undersigned, Notary Public, at Ridgeland, County of Madison, State of Mississippi, on the Albu day of May, 1990, in the presence of the undersigned competent witnesses who hereunto signed their names, with the said Vendor and me, Notary.

WITNESSES:

VENDOR:

FEDERAL LAND BANK OF JACKSON

IN RECEIVERSHIP

REW ENTERPRISES () INC.

Dennis A. Manshack

ITS:

Vice President

NOTARY PUBLIC

My Commission Expires: My Commission Expire: Fig. 8, 1993

DeSoto Parish, LA

Lots 1 and 2 of Section 34; Northwest Quarter of Northwest Quarter, Fractional Southwest quarter of Northwest quarter and Lots 3, 4 and 5 of Section 35; Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition, as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, Louisiana, and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26, all in Township 12 North, Range 11 West, containing 363.96 acres, more or less.

Attached to, made a part of and signed for identification with that certain

Ouit Claim dated the Dorth day of May 19.90

FEDERAL LAND BANK OF JACKSON IN RECEIVERSHIP BY REW ENTERPRISES, INC., REGEIVER

RV.

Dunnie A. Manshack

Vice President

SPECIAL WARRANTY DEED

(With Affidavit Attached)

THE STATE OF LOUISIANA § PARISH OF DESOTO

is

BE IT KNOWN, that on hereinafter named date,

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BEFORE the undersigned Notary Public, duly commissioned and qualified, in and for the hereinafter named county and state, and in the presence of the witnesses hereinafter named and undersigned,

PERSONALLY CAME AND APPEARED:

THE FARM CREDIT BANK OF TEXAS, P. O. Box 15919; Austin, Texas 78761, Tax ID # 74-1110170, acting herein by and through its duly authorized officer by a resolution of the Board of Directors, which is annexed herewith and made a part hereof, hereinafter referred to as GRANTOR,

WHO DECLARES THAT the GRANTOR does by these presents, grants, bargains, sells, conveys, transfers. assigns, set overs, abandons and delivers, with special warranty and with full substitution and subrogation in and to all rights and actions of special warranty which it has or may have against all preceding owners and vendors, unto Anthony Valure, SSN (6) (6) , a person of the full age of majority, a resident of and domiciled in the Parish of DeSoto, State of Louisiana, whose address is Rt. 2, Box 200, Mansfield, Louisiana, 71052, who declares that he has been married but once, and then to Shirley Brown Valure, from whom he was divorced, and that he has not remarried, hereinafter referred to as GRANTEE(S),

hereby accept(s) and purchase(s) for himself and GRANTEE(S) successors and assigns and acknowledge(s) due delivery and possession thereof, all and singular, and all appurtenances thereto, the following described property TO HAVE AND TO HOLD unto GRANTEE(S) and GRANTEE(S) heirs, successors and assigns forever:

296.73 acres of land out of Section Nos. 34 35 and 26, Township 12 North, Range 11 West. Said 296.73 acres being more fully described in "EXHIBIT A" consisting of two (2) pages attached hereto and made a part hereof.

GRANTEE(S) hereby acknowledges and agrees that GRANTOR warrants only such title for the aforedescribed property as acquired by the GRANTOR by an adjudication by the Sheriff of the Parish of DeSoto, Louisiana, December 20, 1989, under writ issued to him in Case No. 49,795 on the Docket of the District Court of this Parish.

The property and all buildings and improvements thereon are sold in an "as is" condition and GRANTEE(S) acknowledges and agrees that this sale is made without warranty, expressed or implied, as to the condition of said property and improvements thereof. GRANTEE(S) hereby relieves GRANTOR from any and all responsibility for vices and defects of said property, whether apparent, non-apparent or latent and from any obligation to take the property back or to reduce its price. GRANTEE(S) further expressly waives any right GRANTEE(S) may have to demand a rescission or resolution of this sale or reduction of the purchase price on breach of any such warranties. GRANTEE(S) further acknowledges that it has thoroughly inspected the property being sold and that the provisions of this waiver have been fully explained and GRANTEE(S) declares that it fully understands and accepts same. GRANTEE(S) acknowledges that the foregoing disclaimer and waive warranties is of the essence of this sale and the sale would not have been made otherwise.

This conveyance is made subject to all easements, right-of-ways, and prescriptive rights, whether of record or not; all presently recorded restrictions, reservations, covenants, conditions, oil and gas leases, mineral severances, and other instruments, other than liens or conveyances, that affect the property; any discrepancies, conflicts, or shortages in area or boundary lines; any encroachments or overlapping of improvements; and any agricultural leases, whether recorded or otherwise. This conveyance is further subject to any and all laws, ordinances, and regulations or any governmental authority having jurisdiction over the above described property, any outstanding ad valorem taxes, and subsequent assessments thereof for this and prior years due to change in land usage, ownership or both, the payment of which GRANTEE assumes. conveyance is subject to any and all laws, ordinances and regulations of any governmental authority having jurisdiction over the above described property, except for the Federal Right of First Refusal under the Agricultural Credit Act of 1987, which as evidenced by the affidavit attached hereto and made a part hereof, has terminated.

This conveyance is made and accepted in consideration of the price and sum of \$63,094.30 and other good and valuable consideration, which the said GRANTEE(S) has well and truly paid in ready and current money.

All riders, appendages, exhibits, erasures, corrections and interlineations made and approved before the signing of these presents.

(over)

Form 1760L-b

802	· 10 P · 1 S O · 0
	he County of Travis of the State of Texas, in my office at nce of these witnesses, who have signed their names with ole.
WITNESSES	FARM CREDIT BANK OF TEXAS
Natoria De	Ву:
	Steven H. Fowlkes , Vice President
Faurie Beth Scantlin	Panel Rae Soulcup
THUS DO PAND ASSED BEFORE ME,	
	and for the Parish/County of, n my office at,
	nesses, who have signed their names with said appearer(s)
and me, Notary, after reading of whole.	
WITNESSES	APPEARERS:
	Anthony Valure
	Notary Public

Lots 1 and 2 of Section 34; Northwest Quarter of Northwest Quarter, Fractional Southwest Quarter of Northwest Quarter and Lots 3, 4 and 5 of Section 35, Lot 4 and 16 acres off the South side of Lot 3 of Jos. King Partition, as per Book 5, page 592, of the Conveyance Records of DeSoto Parish, Louisiana, and otherwise described as all of Lot 5 and the South 7 chains of Lot 2 of Section 26, all in Township 12 North, Range 11 West, containing 363.96 acres, more or less.

LESS AND EXCEPT:

58.58 acres lying in Section 26, Township 12 North, Range 11 West, DeSoto Parish, Louisiana, being more particularly described as follows:

Commence at the Southwest corner of Section 26, T12N-R11W;

Then run North 89 degrees 53 minutes East 2760.3 feet to the point of beginning;

Then run North 89 degrees 53 minutes East 1198.44 feet;

Then run North 00 degrees 15 minutes West 420.87 feet;

Then run North 50 degrees 54 minutes West 1422.05 feet;

Then run South 89 degrees 53 minutes West 220.37 feet;

Then run North 00 degrees 15 minutes West 180.19 feet;

Then run North 50 degrees 54 minutes West 445.7 feet;

Then run South 89 degrees 53 minutes West 1281.55 feet;

Then run South 36 degrees 46 minutes East 81.02 feet;

Then run South 39 degrees 44 minutes West 39.54 feet;

Then run South 27 degrees 21 minutes East 174.08 feet;

Then run North 52 degrees 32 minutes East 67.18 feet;

Then run South 30 degrees 01 minutes East 150.54 feet;

Then run South 44 degrees 11 minutes East 170.69 feet;

Then run South 33 degrees 48 minutes East 68.44 feet;

Then run South 26 degrees 43 minutes East 132.84 feet;

Then run South 45 degrees 55 minutes East 132.37 feet;

Then run South 57 degrees 01 minutes East 174.63 feet;

Then run South 82 degrees 51 minutes East 185.51 feet;

Then run South 62 degrees 14 minutes East 119.51 feet;

Then run South 51 degrees 55 minutes East 590.01 feet;

Then run South 13 degrees 23 minutes East 281.4 feet;

Then run South 49 degrees 59 minutes East 279.97 feet;

Then run South 28 degrees 54 minutes East 65.54 feet to the point of beginning.

Said tract is shown on certificate of Survey by Frank L. Willis, Registered Land Surveyor, Dated 14 November 1991.

Note: 58.58 acre tract is subject to a 60 foot access servitude from Louisiana Highway No. 510 to the most southerly boundary line of said tract.



AND LESS AND EXCEPT:

8.65 acres of land situated in DeSoto Parish, Louisiana, further described as follows:

Tract One:

8.32 acres lying in Section 26, Township 12 North, Range 11 West, DeSoto Parish, Louisiana, and being more particularly described as follows:

Commence at the Southwest corner of Section 26;

Then run North 89 degrees 53 minutes East 2760.3 feet;

Then run North 89 degrees 53 minutes East 1198.44 feet;

Then run North 00 degrees 15 minutes West 420.87 feet;

Then run North 00 degrees 15 minutes West 129.32 feet to the point of beginning.

Then run North 00 degrees 15 minutes West 769.81 feet;

Then run South 89 degrees 53 minutes West 941.47 feet;

Then run South 50 degrees 54 minutes East 1217.52 feet to the point of beginning.

Said tract is shown on certificate of survey by Frank L. Willis, Registered Land Surveyor, dated 14 November 1991.

Tract Two:

.33 acres lying in Section 26, Township 12 North, Range 11 West, DeSoto Parish, Louisiana, being more particularly described as follows:

Commence at the Southwest corner of Section 26;

Then run North 89 degrees 53 minutes East 2760.3 feet;

Then run North 89 degrees 53 minutes East 1198.44 feet;

Then run North 00 degrees 15 minutes West 420.87 feet;

Then North 50 degrees 54 minutes West 1422.05 feet;

Then run South 89 degrees 53 minutes West 220.37 feet;

Then run North 00 degrees 15 minutes West 180.19 feet;

Then run North 00 degrees 15 minutes West 129.32 feet to the point of beginning.

Then run North 00 degrees 15 minutes West 152.49 feet;

Then run South 89 degrees 53 minutes West 186.49 feet;

Then run South 50 degrees 54 minutes East 241.17 feet to the point of beginning.

Said tract is shown on certificate of survey by Frank L. Willis, Registered Land Surveyor, dated 14 November 1991.

The above described land containing in the aggregate 296.73 acres, more or less.

RECEIVED & FILED DESOTO PARISH. LA.

Jun 16 9 12 AN '97

A NET M ARECORDER
CONU BK 737 P 676

STATE OF LOUISIANA:

PARISH OF RED RIVER:

CASH DEED

BE IT KNOWN, that this day before the undersigned authority, a Notary Public within and for said Parish and State, duly commissioned and sworn, came and appeared, as Vendor:

HONKER PLANTATION, INC., Tax Identification Number 72-1317105, a Louisiana Corporation domiciled in Red River Parish, Louisiana, which has a mailing address of Post Office Box 383, Coushatta, Louisiana 71019, represented herein by its duly authorized Secretary/Treasurer, Lewis Sams, as per Resolution dated June 12, 1997, and attached hereto.

who declared that it does by these presents, CRANT, BARCAIN, SELL, CONVEY AND DELIVER, with full guarantee of title, and with complete transfer and subrogation of all rights and actions of warranty against all former proprietors of the property herein conveyed, together with all rights of prescription, whether acquisitive or liberative, to which said Vendor may be entitled, unto the following, as Vendee:

DONALD W. POWELL, S.S. (b) (6) and NANCY MYERS POWELL, S.S. # (b) (6) _____, husband and wife, residents of DeSoto Parish, Louisiana whose address is 4630 Hwy. 510 Mansfield, Louisiana 71052;

the following described property, to-wit:

The South Half of the following: All that part of the West Half of Section 26, Township 12 North, Range 11 West, DeSoto Parish, Louisiana, lying East of Red Bayou and South of a line drawn East and West through a point 1542-1/2 feet South of a point on the South bank of Garcia Bayou where the line running North and South between the Southeast Quarter of Southwest Quarter and Southwest Quarter of Southwest Quarter of Section 23, Township 12 North, Range 11 West, crosses said Bayou and North of a line drawn East and West through a point 4627-1/2 feet South of the above described point on Garcia Bayou, LESS AND EXCEPT 16 acres of the South side of said tract embraced between parallel lines running East and West, the South line of 16 acre tract being the South line of larger tract above described. Containing 71 acres, more or less.

AND being that portion of the property lying East of the Bayou designated as "Dolet Bayou" as shown on plat of survey prepared by Printis E. Murphy dated April 20, 1994 and attached hereto. It is noted by Vendor and Vendee that Red Bayou is incorrectly designated on the plat as Dolet Bayou.

558871

LESS AND EXCEPT the following:

- 1) Start at the Northwest corner of that tract lying East of "Dolet Bayou" as shown on plat of survey prepared by Printis E. Murphy dated April 20, 1994 and from said point run South to the South Right of way of La. Hwy. 510 to the Point of beginning and from said point of beginning run Southeasterly 846 feet along the South right of way of La. Hwy. 510; thence run Southerly 550 feet more or less to an iron rod placed on the East bank of "Dolet Bayou" thence run Northerly along the East bank of "Dolet Bayou" 1009 feet; more or less to the point of beginning.
- 2) Less and except the right of way for Louisiana Hwy. 510 which right of way is 50' in width.
- 3) Vendor reserves 1/2 of the whole of the oil, gas and other liquid or gaseous hydrocarbon minerals, conveying all others, and further reserves all rights of ingress and egress necessary for the location, production and sale of said minerals.

TO HAVE AND TO HOLD said described property unto said Vendee, their heirs and assigns forever.

This sale is made for the consideration of the sum of Forty Four Thousand and no/100 (\$44,000.00) Dollars, cash in hand paid, the receipt and sufficiency of which is hereby acknowledged.

Title not examined unless separate written Title Opinion given.

The Certificate of Mortgage is hereby waived by the parties, and evidence of the payment of taxes produced.

Taxes for the current year shall be prorated between the parties, as of the date of this deed.

DONE AND PASSED at my office in said Parish of Red River, in the presence of the undersigned competent attesting witnesses, on this the 12th day of June, 1997.

The State of the S

HONKER PLANTATION, INC.

Lewis Sams, Secretary/Tres.

NOTARY PUBLIC

HONKER PLANTATION, INC.

BE IT RESOLVED by the Board of Directors of HONKER PLANTATION, INC., that at a special meeting of the Board of Directors held on this 12th day of June, 1997, Bill R. Shaw, President, and Lewis O. Sams, Secretary/Treasurer, acting together or alone, are hereby authorized to do and perform all or any of the following acts and things on behalf of and in the name of this corporation, all within their discretion.

- 1) To sell, mortgage, hypothecate, lease, convey, deliver, and transfer any and all property, movable and immovable, of the corporation.
- 2) To receipt for any and all sums which may be due the corporation.
- 3) To negotiate for or incur debts in the name of this corporation and to give and grant evidence of indebtedness, such as promissory notes, secured and unsecured, drafts, bills of exchange, checks, etc., and to pledge for any indebtedness incurred.
- 4) To negotiate for and buy, in the name of this corporation, any property, real or chattel.
- 5) To authorize the prosecution and defense of lawsuits on behalf of the corporation, and to settle, compromise and satisfy any claims, charges, suits or disputes which may effect this corporation or its property.
- 6) To employ such person or persons whose services may be needed by this corporation.
- 7) To do and perform all acts and execute all instruments in writing, deeds, mortgages, checks, drafts, promissory notes or other instruments necessary to carry out the provisions of this resolution.
- 8) All acts done pursuant to this resolution shall be within the discretion of Bill R. Shaw and/or Lewis O. Sams, and shall be binding, legal and enforceable acts of this corporation.
- 9) The authority herein granted shall continue in effect until formally revoked by the appropriate resolution of the Board of Directors of this corporation.

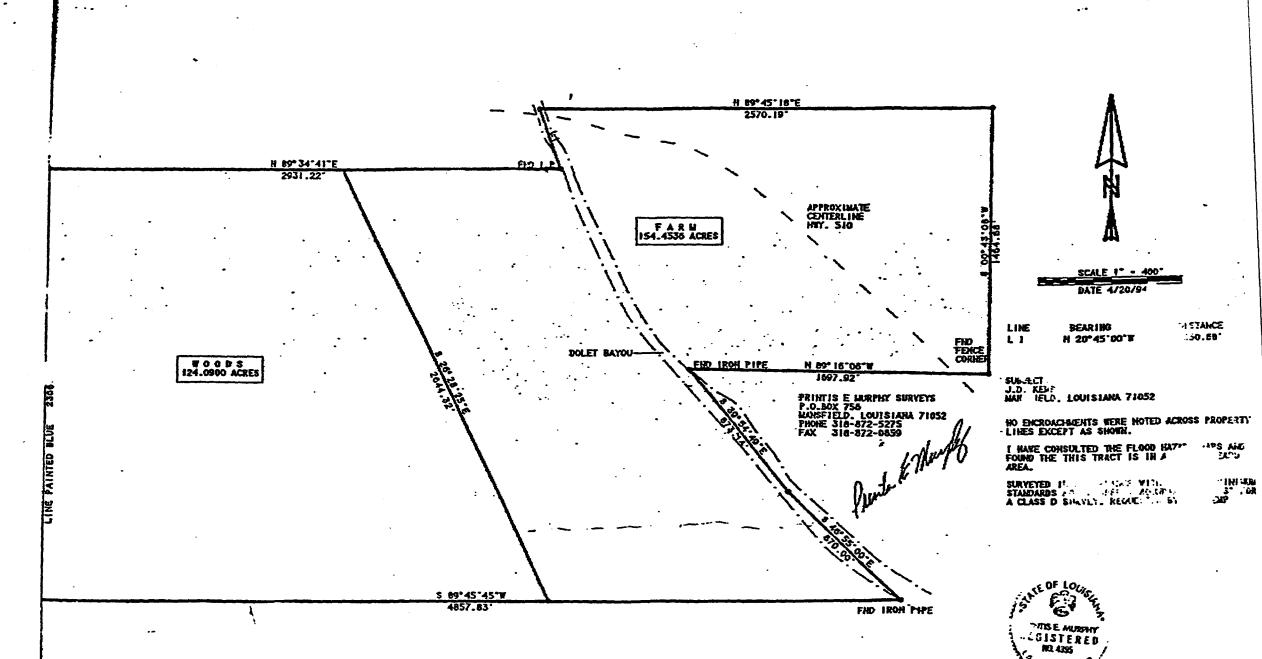
Bill R Shaw President

is/O. Sams, Secretary/Treasurer

CERTIFICATE

I, LEWIS O. SAMS, Secretary/Treasurer of the Board of Directors of Honker Plantation, Inc., do hereby certify that the above and foregoing is a true and correct copy of the resolution passed by the Board of Directors at a special meeting held on the 12th day of June, 1997.

Lewis O. Sams, Secretary/Treasurer



Jan 5 | 16 Ail '99 CREDIT SALE DEED

PARISH OF BOSSIER COM

mtq 269 P.743

STATE OF FLORIDA COUNTY OF <u>ESCAMBIA</u>

STATE OF TEXAS COUNTY OF FORT BEND

BE IT KNOWN, that before us. the undersigned Notaries Public, in and for said States and Parish/Counties, duly commissioned and sworn, and in the presence of the undersigned competent witnesses, personally came and appeared:

SARAH GAYLE PLACE BOUIS (SSN^(b)), wife of Ashton E. Bouis, Jr., a resident of Caddo Parish, Louisiana, whose mailing address is 6580 Preston Road, Keithville, Louisiana 71047, and with the said Ashton E. Bouis, Jr. also appearing to acknowledge that the property conveyed is the separate property of his wife;

D. Hagewood, a resident of Natchitoches Parish, Louisiana, with mailing address of 760 St. Maurice Lane, Natchitoches, La 71457, appearing herein through her Agent and Attorney in Fact, Martha Hagewood Wooden, duly authorized by virtue of that Power of Attorney attached hereto and made a part hereof;

THOMAS FRANKLIN WAITS, JR. (SSN husband of Rosie Lee Waits, a resident of the State of Texas, with mailing address of 2646 Live Oak Drive, Rosenberg, Texas 77471-6020, with the said Rosie Lee Waits also appearing to acknowledge that the property conveyed is the separate property of her husband;

AND

DAVID ARTHUR WAITS (SSN husband of Rebecca Lynn Waits a resident of the State of Florida, with mailing address of 4290 Capri Drive, Pensacola. Florida, with the said Rebecca Lynn Waits also appearing to acknowledge that the property conveyed is the separate property of her husband;

Each conveying their separate property.

hereinafter individually and/or collectively called "VENDOR/MORTGAGEE";

who each declared that they do by these presents, GRANT, BARGAIN, SELL, CONVEY AND DELIVER with full guaranty of title, and with complete transfer and subrogation of all rights and actions of warranty against all former proprietors of the property herein conveyed, together with all rights of prescription, whether acquisitive or liberative, to which said vendors may be entitled, unto:

DONALD WAYNE POWELL (SSN and NANCY MYERS POWELL (SSN b), husband and wife, residents of DeSoto Parish, Louisiana, with mailing address of 4630 Highway 510, Mansfield, La 71052;

hereinafter called "VENDEE/MORTGAGOR";

any and all interest they have in and to the following described property, to-wit:

All of the following described property South of an East and West line drawn through the same parallel to the East and West center line of Section 36, Township 12 North. Range 11 West, and 1.85Chs. North of said center line of said Section 36, and more particularly shown on plat of survey annexed to the partition of said property between Earl H. Browne and Mrs. Elizabeth Cubberly Harp, of record in DeSoto Parish, Louisiana, to wit: Lot One (1) and Two (2) or Fraction Northeast Quarter of Section 35, Lots Six (6), Seven (7), Eight (8) and Nine (9) or fractional West Half of West Half; and East Half of West Half; and the West Half of Northeast Quarter and the Northwest Quarter of the Southeast Quarter of Section 36 in Township 12 North, Range 11 West, containing 175 acres, and that portion of Lot 2 of Section 1, Township 11 North, Range 11 West, lying West of the half mile line running North and South through the center of Section 1, Township 11 North, Range 11 West, containing 90 acres, in DeSoto Parish, Louisiana, together with all buildings and improvements thereon, and the privileges and appurtenances appertaining thereto, being a portion of the same tract originally containing 530 acres, more or less, it being the intent of the parties that a total of 265 acres more or less, is conveyed herein.

TO HAVE AND TO HOLD said described property unto said purchasers, their heirs and assigns forever.

THIS SALE is made for the consideration of the sum of **ONE HUNDRED NINETY-EIGHT THOUSAND SEVEN HUNDRED FIFTY AND NO/100THS (\$198,750.00) DOLLARS,**payable as follows:

NO (S00.00) DOLLARS Cash in hand paid, the full balance of ONE HUNDRED NINETY-EIGHT THOUSAND SEVEN HUNDRED FIFTY AND NO/100THS (S198,750.00) DOLLARS in ONE NOTE of said purchaser, dated with this act, payable to the order of "SARAH GAYLE PLACE BOUIS, ELIZABETH BROWNE HAGEWOOD. THOMAS FRANKLIN WAITS, JR., AND DAVID ARTHUR WAITS", and payable as follows:

TWELVE (12) consecutive Annual installments of TWENTY-SIX THOUSAND THREE HUNDRED SEVENTY-THREE AND 13/100THS (\$ 26,373.13) DOLLARS each, the first installment being due and payable on or before November 30. 1998 and a like payment being due on or before the 30th day of November each succeeding year thereafter until paid in full, with the final payment to include all remaining unpaid principal, interest and penalties.

Said payments to be made in accordance with the directions of Mortgagees.

Which note bears EIGHT (8.0%) per cent per annum interest from date, and paraphed "Ne Varietur" of this date by me, Notary to identify the same herewith.

Prepayment of this note or any part thereof may be made in whole or in part, from time to time without penalty.

IN the event of failure to pay said note when due, or failure to pay the taxes on said property before delinquent, then, and in that event, the note shall immediately become due and collectable at the option of the holder. The mortgagee may collect a "late charge" not to exceed \$250.00 per payment more than ten (10) days in arrears to cover the extra expense involved in handling delinquent payments.



THE entire balance due under the terms of the hereinabove described promissory note shall be due and payable immediately upon sale and/or transfer of the hereinabove described property without said property being released from this mortgage.

AND. in order to secure the payment of said note, interest, costs and attorney's fees, a special mortgage and vendor's privilege is hereby stipulated on said property in favor of said Vendor, or any future holder of said note, said purchaser agreeing not alienate, deteriorate or encumber said property to the prejudice of this mortgage.

IN the event of suit for collection of said note or any other amount which may be due under this contract or when said claims are placed in the hands of an attorney for collection, such purchaser agrees to pay the fees of such attorney at law who may be employed for that purpose, which fees are hereby fixed at twenty-five (25%) per cent on the amount to be collected; and the holder of said note shall be entitled to the appointment of a receiver of the rents and revenues of said premises.

IN the event that any check is given for the payment of the note herein and the check is returned for "NSF" funds, purchaser agrees to pay a fee, which is hereby fixed at Twenty-five (\$25.00) Dollars, to the holder of the note herein.

MORTGAGOR does herein and hereby waive the three days' notice of demand provided for by Article 2639 of the Code of Civil Procedure of the State of Louisiana.

MORTGAGOR further declares that he does hereby waive and relinquish in favor of the Mortgagee or any future holder of the notes herein any and all homestead claims or exemptions to which he is entitled by law upon said property.

THIS mortgage waiving benefit of appraisal and importing confession of judgment.

THE certificate of mortgage is hereby waived by the parties and evidence of the payment of taxes produced.

VENDOR takes cognizance of all past due and/or current year's taxes and agrees to pay the same.

MORTGAGOR shall, so long as this Mortgage remains in effect, be responsible for paying all taxes, licenses and assessments. Proof of payment of Taxes must be furnished by Mortgagor for the term of this mortgage.

THIS MORTGAGE is not assumable.

THIS sale is made subject to all easement, reservations and other matters of public record.

VENDORS Reserve One-half (1/2) of Mineral Rights on Said Property for a Period of Ten (10) Years.

BUYER has inspected the property and accepts that the property is conveyed herein in an "AS IS" condition, and without warranty as to the fitness of the property for any particular use.

NO TITLE EXAMINATION has been requested of nor performed by the Notaries, and the description of the property and information contained herein including interest payment schedule, are as provided by the parties hereto.

STATE OF LOUISIANA PARISH OF BOSSIER

DONE AND PASSED in my office in Bossier City. Louisiana. in the presence of the undersigned competent witnesses and me, Notary, on the Day of December, 1998.

WITNESSES:

Sarael Sonia

My G. Suh

SARAH GAYLE PLACE BOUIS, Vendor/Mortgagee

ASHTON E. BOUIS, JR., Appearer

DONALD WAYNE POWELL, Vendee/Mortgagor

NANCY MYER POWELL, Vendee/Mortgagor

Suncle Wall Laure
Notary Public

STATE OF LOUISIANA
PARISH OF Line Pite

DONE AND PASSED in my office in <u>West Moniec</u>, Louisiana, in the presence of the undersigned competent witnesses and me, Notary, on the <u>18</u> Day of <u>December</u>, 1998.

WITNESSES:

Martha

BROWNE

HAGEWOOD,

Vendor/Mortgagee, Through her Agent,

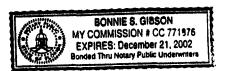
Martha Hagewood Wooden

NOTARY PUBLIC

STATE OF TEXAS COUNTY OF FORT BEND DONE AND PASSED in my office in Rosenberg, Texas, in the presence of the undersigned competent witnesses and me. Notary, on the _30 Day of November, 1998. THOMAS FRANKLIN WAITS, JE Ven**d**or/Mortgagee ROSIE LEE WAITS, Appearer ROSEMARY MOECKEL NOTARY PUBLIC STATE OF TEXAS NOTARY PUBLIC My Commission Expires Comm. Exp. 4-02-2000 Louisiana Law Requires The Signatures of Two Witnesses In Addition To The Notary. The Notary May Not Act As A Witness. STATE OF FLORIDA COUNTY OF ESCAMBIA DONE AND PASSED in my office in **Leasacola**, Florida, in the presence of the undersigned competent witnesses and me, Notary, on the 137 Day of December, 1998. DAVID ARTHUR WAITS Vendor/Mortgagee Appearer

NOTARY PUBLIC,
My Commission Expires 12/21/2002

Louisiana Law Requires The Signatures of Two Witnesses In Addition To The Notary. The Notary May Not Act As A Witness



* Personally Known

ASSIGNMENT

MECHIVED AND FILED
PROTECTION FAMISH, LA

2001 AUG 290 A 11: 14

STATE OF	LOUISIANA	δ
		3

KNOW ALL MEN BY THESE PRESENTS THAT:

PARISH OF DeSOTO §

CORV 792 112

For and in consideration of the sum of Ten Dollars and other good and valuable consideration (\$10.00 & OVC), the receipt and sufficiency of which are hereby acknowledged, Trans-Gulf Petroleum Corporation, whose address is 2425 East Texas Street, Bossier City, La. 71111; hereinafter referred to as "Assignor," does by these presents hereby GRANT, BARGAIN, SELL, CONVEY, TRANSFER, ASSIGN AND DELIVER unto Pelican Resource Management, L. L. C., whose mailing address is 910 Pierremont Road, Suite 410, Shreveport, Louisiana, 71106, hereinafter referred to as "Assignee," its heirs successors and assigns, all of Assignor's right, title and interest in and to the following, to-wit:

- (1) All right, title and interest in and to the Oil, Gas and Mineral Leases described on Exhibit "A," attached hereto and made a part hereof, as same may have been limited therein (hereinafter called Assigned Leases);
- (2) All right, title and interest derived from all presently existing and valid oil, gas or mineral unitization, pooling, operating and communitization agreements, declarations and orders, and the units created thereby including, without limitation, all units voluntarily formed or formed under orders, regulations, rules or other official acts of any federal, state or other Governmental Authority having jurisdiction, which relate to the Assigned Leases;
- (3) All lease and well equipment, machinery, fixtures, and other items of personal property of every character in any manner whatsoever related to assigned leases or used or held for use by Assignor in connection with mineral operations related thereto;
- (4) All oil, gas and other minerals which may be produced under or by virtue of the assigned leases; and
- (5) All operating agreements, gas purchase agreements, farmout agreements and the like which in any manner whatsoever relate to or affect the assigned leases.
- (6) All claims or causes of action of whatever kind or nature, if any, arising from or with respect to the Assigned Leases whether the events, occurrences, facts or circumstances giving rise to such claims or cause of action arose prior to or after the effective date of this assignment and all of the rights and benefits which may accrue to the owner of the Assigned Leases under such claim or causes of action with respect to periods before and after the effective date of this assignment.

TO HAVE AND TO HOLD unto said Assignee, its heirs, successors and assigns forever, subject to the terms and provisions of assigned leases and other instruments of record affecting said leases, in accordance with the terms and provisions of this instrument.

Assignee agrees to accept full responsibility for the plugging and abandonment of all wells conveyed hereby and agrees to comply with all requirements and rules and regulations of the State of Louisiana governmental oil and gas regulatory body in effect at the time any well conveyed hereby is plugged. Assignee agrees to hold Assignor harmless from and against any expense, claim or cause of

action brought against Assignor or Assignee by any third party arising from Assignee's failure to plug or improper plugging of any well conveyed hereby.

This assignment is made without any warranty of title whatsoever, except as to claims arising by, through or under Assignor, but with full subrogation and substitution in and to all of the rights and actions of warranty against all previous owners whatsoever and whomsoever, and except that Assignor warrants that it has not mortgaged, pledged, hypothecated or otherwise used the Assigned Leases as security or caused same to become subject to any judicial mortgage.

This assignment may be executed in any number of counterparts, which of which shall be considered an original for all purposes.

IN WITNESS WHEREOF, this instrument is executed on this 29th day of August, 2001, but made effective as of August 01, 2001.

WITNESSES

Carene V. Sneed

ASSIGNOR:

Trans-Gulf Petroleum Corporation

By: Willard M. Sneed, its Secretary/Treasurer

WITNESSES:

ASSIGNEE:

Pelican Resource Management, L. L. C. By: James M. Monk, it's General Partner

EXHIBIT "A"

Attached to and made a part of that certain Assignment dated August 29, 2001, and made effective August 01, 2001, by and between Trans-Gulf Petroleum Corporation as Assignor, and Pelican Resource Management, L. L. C., as Assignee, covering Oil, Gas and Mineral Lease and the oil &gas wells listed below and located in DeSoto Parish, Louisiana.

That certain Oil, Gas and Mineral Lease dated February 15, 1995, by and between Annie Laurie Lanier Samuels, et al, as Lessors and Trans-Gulf Petroleum Corporation, as Lessee, and being recorded in Book 717, Page 411, Registry #548987 of the records of DeSoto Parish, Louisiana.

Well Name	Serial #	Section/ Township/Range
(b) (6)	150634	S23-T12N-R11W
	151217	S14-T12N-R11W
	151354	S14-T12N-R11W
	151488	S22-T12N-R11W
	151690	S15-T12N-R11W
	169086	S15-T12N-R11W
	151599	S22-T12N-R11W
	156754	S22-T12N-R11W
	156828	S22-T12N-R11W
	201693	S22-T12N-R11W
(b) (6)	172528	S21-T12N-R11W
	176207	S21-T12N-R11W
	176742	S21-T12N-R11W
(1) (0)	177776	S21-T12N-R11W
(b) (6) Investments B-1	184981	S21-T12N-R11W
(b) (6)	177155	S21-T12N-R11W
	151450	S21-T12N-R11W
	197396	S21-T12N-R11W
Vamer#1	152795	S26-T12N-R11W
Vamer #2	152863	S34-T12N-R11W
Vamer #3	194686	S35-T12N-R11W
(b) (6)	199431	S01-T12N-R11W
	199276	S36-T12N-R11W
	172915	S36-T12N-R11W

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RECEIVED AND FILED DESOTO PARISH. LA

ASSIGNMENT

2002 JUN-6 A 9:27 DEPUTY CLERK & RECORDER

STATE OF LOUISIANA

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KNOW ALL MEN BY THESE PRESENTS THAT:

COUNTY/PARISH OF DeSOTO

100N 802 1410

For and in consideration of the sum of Ten Dollars and other good and valuable consideration (\$10.00 & OVC), the receipt and sufficiency of which are hereby acknowledged, Pelican Resource Management, L. L. C., whose address is 910 Pierremont Road, Suite 410, Shreveport, La.71106; hereinafter referred to as "Assignor," does by these presents hereby GRANT, BARGAIN, SELL, CONVEY, TRANSFER, ASSIGN AND DELIVER unto Bengal Production Company, Inc., a Delaware Corporation whose mailing address is 111 Swedes Avenue, Shreveport, Louisiana 71105, hereinafter referred to as "Assignee," its heirs successors and assigns, all of Assignor's right, title and interest in and to the following, to-wit:

- (1) All right, title and interest in and to the Oil, Gas and Mineral Leases described on Exhibit "A," attached hereto and made a part hereof, as same may have been limited therein (hereinafter called Assigned Leases);
- (2) All right, title and interest derived from all presently existing and valid oil, gas or mineral unitization, pooling, operating and communitization agreements, declarations and orders, and the units created thereby including, without limitation, all units voluntarily formed or formed under orders, regulations, rules or other official acts of any federal, state or other Governmental Authority having jurisdiction, which relate to the Assigned Leases;
- (3) All lease and well equipment, machinery, fixtures, and other items of personal property of every character in any manner whatsoever related to assigned leases or used or held for use by Assignor in connection with mineral operations related thereto;
- (4) All oil, gas and other minerals which may be produced under or by virtue of the assigned leases but subject to any overriding royalties of record.
- (5) All operating agreements, gas purchase agreements, farmout agreements and the like which in any manner whatsoever relate to or affect the assigned leases.
- (6) All claims or causes of action of whatever kind or nature, if any, arising from or with respect to the Assigned Leases whether the events, occurrences, facts or circumstances giving rise to such claims or cause of action arose prior to or after the effective date of this assignment and all of the rights and benefits which may accrue to the owner of the Assigned Leases under such claim or causes of action with respect to periods before and after the effective date of this assignment.

TO HAVE AND TO HOLD unto said Assignee, its heirs, successors and assigns forever, subject to the terms and provisions of assigned leases and other instruments of record affecting said leases, in accordance with the terms and provisions of this instrument.

Assignce agrees to accept full responsibility for the plugging and abandonment of all wells conveyed hereby and agrees to comply with all requirements and rules and regulations of the State of Louisiana governmental oil and gas regulatory body in effect at the time any well conveyed hereby is

593663

plugged. Assignee agrees to hold Assignor harmless from and against any expense, claim or cause of action brought against Assignor or Assignee by any third party arising from Assignee's failure to plug or improper plugging of any well conveyed hereby.

This assignment is made without any warranty of title whatsoever, except as to claims arising by, through or under Assignor, but with full subrogation and substitution in and to all of the rights and actions of warranty against all previous owners whatsoever and whomsoever, and except that Assignor warrants that it has not mortgaged, pledged, hypothecated or otherwise used the Assigned Leases as security or caused same to become subject to any judicial mortgage.

This assignment may be executed in any number of counterparts, which of which shall be considered an original for all purposes.

IN WITNESS WHEREOF, this instrument is executed on this 3rd day of June, 2002, but made effective as of April 15, 2002.

WITNESSES

ASSIGNOR:

Pelican Resource Management, L. L. C. By James M. Monk, it's Managing Partner

ACKNOWLEDGMENTS

STATE OF LOUISIANA

PARISH OF CADDO

On this 3rd day of June, 2002, before me personally came and appeared James M. Monk, to me personally known to be the person who executed the foregoing instrument and who acknowledged that he executed same as his free act and deed.

NOTAR PUBLIC, in and for Caddo Parish, Louisiana

My Commission Expires:
At death

B. W. LOGAN, NOTARY PUBLIC CADDO PARISH, LOUISIANA MY COMMISSION IS FOR LIFE

EXHIBIT "A"

Attached to and made a part of that certain Assignment dated June 03, 2002 but made effective April 15, 2002, by and between Pelican Resource Management, L. L. C., as Assignor, and Bengal Production Company, Inc., as Assignee, covering property located in DeSoto Parish, Louisiana.

That certain Oil, Gas & Mineral Lease dated February 15, 1995, by and between Annie Laurie Lanier Samuels, et al, as Lessors, and Trans-Gulf Petroleum Corporation, as Lessee, and being recorded in Book 717, Page 411, Registry # 548987 of the records of the Clerk of Court, DeSoto Parish, Louisiana.

Well Name	Serial#	Section	Township	Range
(b) (6)	150634	23	12 North	11 West
	151217	14	12 North	11 West
	151354	14	12 North	11 West
	151488	22	12 North	11 West
	151690	15	12 North	11 West
	169086	15	12 North	11 West
	1515 99	22	12 North	11 West
	156754	22	12 North	11 West
	156828	22	12 North	11 West
	201693	22	12 North	11 West
	172528	21	12 North	11 West
	176207	21	12 North	11 West
	176742	21	12 North	11 West
	177776	21	12 North	11 West
(b) (6) Investments B-1	184981	21	12 North	11 West
(b) (6)	177155	21	12 North	11 West
	151450	21	12 North	11 West
	197396	21	12 North	11 West
∠ Varner #1	152795	26	12 North	11 West
Vamer #2	152863	34	12 North	11 West
Vamer #3	194686	35_	12 North	11 West
(b) (6)	199431	1	12 North	11 West
	199276	36	12 North	11 West
	172915	36	12 North	11 West

EPA No.: 16-E-1003 FPN: E03612

APPENDIX 9

OPERATOR RECORDS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

Charter/Organization ID: 31010340D

Name: MONTE CARLO EXPLORATION, INC.

Type Entity: Business Corporation

Status: Not Active (Action by Secretary of State)

Domicile Address: 1401 BELLAIRE BLVD., BOSSIER CITY, LA 71010

Incorporated: 04/28/1975 | Effective: 04/24/1975

Registered Agent (Appointed 4/28/1975): GARLAND A. SMITH, 1401 BELLAIRE BLVD., BOSSIER CITY, LA 71010

Amendments on File REVOKED (05/13/1982) DOMICLE, AGENT CHG OR RESIGN OF AGT (10/13/1975)

Charter/Organization ID: 23804190D

Name: TRANS-GULF PETROLEUM CORPORATION

Type Entity: Business Corporation

Status: Not Active (Action by Secretary of State)

Domicile Address: 2425 E. TEXAS ST., BOSSIER CITY, LA 71111

Incorporated: 05/03/1957 | Effective: 05/03/1957

Registered Agent (Appointed 4/05/1983): WILLIAM J. SNEED, 2425 E. TEXAS, BOSSIER CITY, LA 71111

Officer(s)/Director(s): WILLARD M. SNEED | WILLIAM J. SNEED

Incorporator(s): JAMES C. MAYFIELD | JAMES A. GUICE | CHARLES E. MAYFIELD | ALVA J. DIXON | S. M. ROYCROFT

Amendments on File REVOKED (08/17/1999) AMENDMENT (03/03/1969) AMENDMENT (01/08/1969)

Charter/Organization ID: 31720710F

Name: VANDER/GRAHAM EXPLORATION, INC.

Type Entity: Business Corporation (Non-Louisiana)

Status: Not Active (Action by Secretary of State)

Domicile Address: 6440 N. CENTRAL EXPWY., DALLAS, TX 75206

Principal Office:

Principal Bus. Est. in Louisiana:

Qualified: 02/16/1977 | Effective: 02/16/1977

Registered Agent (Appointed 2/16/1977): FRANK S. KENNEDY, 1212 MID SOUTH TOWERS, SHREVEPORT, LA 71101

Amendments on File REVOKED (05/13/82)

The following operator had no information in the following: http://www.sec.state.la.us/crpinq.htm

L. B. Levell & Associates

Charter/Organization ID: 34797480F

Name: REDMAN OPERATING COMPANY

Type Entity: Business Corporation (Non-Louisiana)

Status: Active

Annual Report Status: In Good Standing

Domicile Address: 10375 RICHMOND AVE., HOUSTON, TX 77042-4151

Principal Office: 10375 RICHMOND AVE., HOUSTON, TX 77042-4151

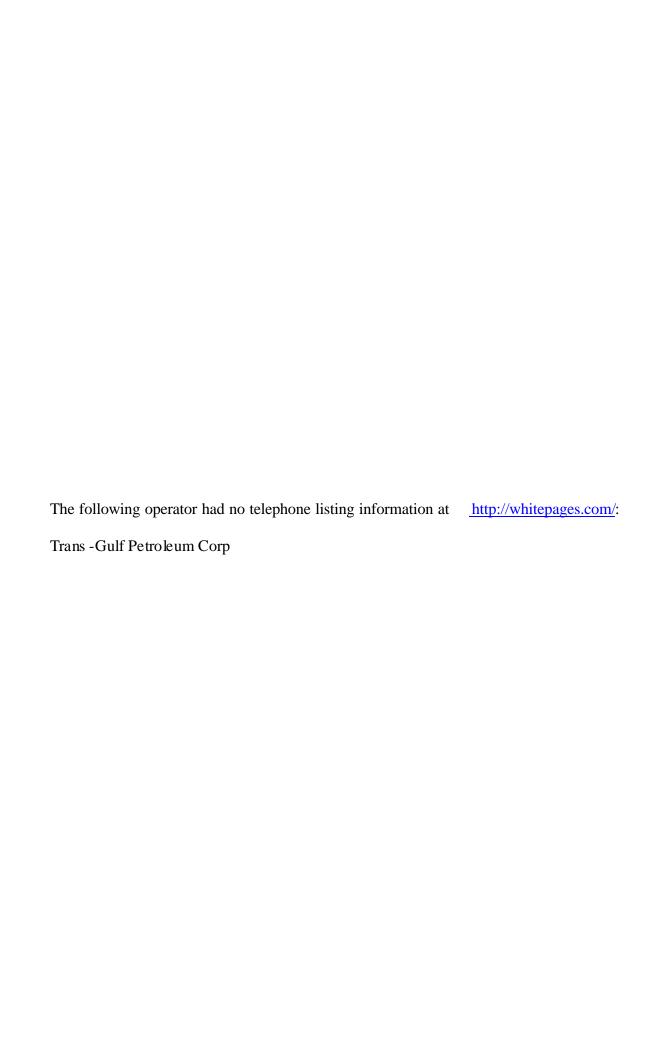
Principal Bus. Est. in Louisiana: 8550 UNITED PLAZA BLVD., BATON ROUGE, LA 70809

Qualified: 05/28/1999 | Effective: 05/28/1999

Registered Agent (Appointed 5/28/1999): C T CORPORATION SYSTEM, 8550 UNITED PLAZA BLVD., BATON ROUGE, LA 70809

Officer(s)/Director(s): JEFF VONCANNON











EPA No.: 16-E-1003 FPN: E03612

APPENDIX 10

LDNR INFORMATION

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

Organization Name

Org ID	Name
4226	MONTE CARLO EXPLORATION INC.

Address Information

Oper Type	Addr1	Addr2	Add Type	City, State Zip	ATTN Name	Contact Name	Phone Num	Phone Type
11(1)1	NO ADDRESS ON RECORD.		<u>01</u>	N/A, ZZZZZ 00000- 0000		NO CONTACT GIVEN		
11(1)1	NO ADDRESS ON RECORD.		<u>03</u>	N/A, ZZZZZ 00000- 0000		NO CONTACT GIVEN		
<u>01</u>	1401 BELLAIRE BLVD.		<u>05</u>	BOSSIER CITY, LA 71112-0000		NO CONTACT GIVEN		
<u>01</u>	1104 BELLAIRE BLVD.		<u>06</u>	BOSSIER CITY, LA 71112-0000		NO CONTACT GIVEN		
01	1401 BELLAIRE BLVD.		<u>09</u>	BOSSIER CITY, LA 71112-0000		NONE SPECIFIED		

Organization Officers

No Data Found

Organization Red Flags

Effective Date	End Date	Warning Status	Warning Description
01/01/1977		X	NO RESPONSIBLE PARTY/CORRESPONDENCE UNANSWERED

Organization Name

Org ID	Name
6040	TRANS-GULF PETROLEUM CORP

Address Information

Oper Type	Addr1	Addr2	Add Type	City, State Zip	ATTN Name	Contact Name	Phone Num	Phone Type
11()*1	P. O. BOX 5355		<u>01</u>	BOSSIER CITY, LA 71171-0000		NO CONTACT GIVEN		
11(1)1	P.O. BOX 5355		<u>03</u>	BOSSIER CITY, LA 71171-5355		W. J. SNEED	(318)746- 4528	OFFICE
11(1)1	P. O. BOX 5355		<u>05</u>	BOSSIER CITY, LA 71171-0000		W. J. SNEED	(318)746- 4528	OFFICE
11(1)1	P. O. BOX 5355		<u>06</u>	BOSSIER CITY, LA 71171-0000		NO CONTACT GIVEN	(318)746- 4528	OFFICE
11(1)1	P. O. BOX 5355		<u>09</u>	BOSSIER CITY, LA 71171-0000		W. J. SNEED	(318)746- 4528	OFFICE

Organization Officers

Officer Name	Title	Address1	Address2	City, State Zip	Effective Date
WILLIAM J. SNEED	PRESIDENT	P. O. BOX 5355		BOSSIER CITY, LA 71171-5355	01/01/1998

Organization Red Flags

Effective Date	End Date	Warning Status	Warning Description
	1		

01/01/1977	S	FORM R-4 SUSPENDED FOR PRODUCTION AUDIT DISCREPANCIES
01/01/1977	F	FINE-CIVIL PENALTY HAS BEEN ISSUED
01/01/1977	E	I & E COMPLIANCE VIOLATION
09/20/1999	Χ	NO RESPONSIBLE PARTY/CORRESPONDENCE UNANSWERED

Organization Name

Org ID	Name
6157	VANDER-GRAHAM EXPLORATION, INC

Address Information

Oper Type	Addr1	Addr2	Add Type	City, State Zip	ATTN Name	Contact Name	Phone Num	Phone Type
11(1)1	NO ADDRESS ON RECORD.		()1	N/A, ZZZZZ 00000-0000		NO CONTACT GIVEN		
11(1)1	NO ADDRESS ON RECORD.		(15)	N/A, ZZZZZ 00000-0000		NO CONTACT GIVEN		

Organization Officers

No Data Found

Organization Red Flags

No Data Found

Organization Officers

Officer Name	Title	Address1	Address2	City, State Zip	Effective Date
J JEFF VONCANNON		10375 RICHMOND AVENUE		HOUSTON,, TX 77042-4151	06/03/1999

Organization Red Flags

No Data Found

Wells By Field By Organization

ALL WELL STATUS CODES

Field Id	Field Name	Organization Id	Organization Name
7651	RED RIVER-BULL BAYOU	6040	TRANS-GULF PETROLEUM CORP

Cnt	Well Serial	Luw Code	Psh Code	Well Name	Well Num	Sec	Twns	Rng	Meridian	Well Status	Class	Class Type
1	150634		16	MCMULLIN WEMPLE	001	023	12N	11W	W	23][]]	.) 0
2	151217		16	MCMULLIN WEMPLE	002	014		11W		23]	
一	151354	034071	16	MCCMULLEN- WEMPLE	003	014	12N	11W	W	23		
4	151450		<u>16</u>	JOHN CALLON AGENT	002	021	12N	11W	W	30		
5	151488		<u>16</u>	MCMULLIN WEMPLE	004	022	12N	11W	W	23		
6	<u>151690</u>	034071	<u>16</u>	MCMULLIN WEMPLE	005	015	12N	11W	W	23]	
7	<u>152610</u>		<u>16</u>	BONDS	001	022	12N	11W	W	23]	
8	152795	034218	<u>16</u>	VARNER	001	026	12N	11W	W	23		
9	152863	034218	<u>16</u>	VARNER	002	034	12N	11W	W	23		
10	154094		<u>16</u>	CONTINENTAL CAN CO	001	028	12N	11W	W	30		
11	<u>155385</u>		<u>16</u>	CONTINENTAL CAN CO	002	028	12N	11W	W	23		
12	<u>156754</u>		<u>16</u>	MCMULLEN	003	022	12N	11W	W	23]	
13	156828	156828	<u>16</u>	MCMULLEN	004	023	12N	11W	W	28]	
14	169086	036807	<u>16</u>	MCMULLEN	001	015	12N	11W	W	23]	
15	170783		<u>16</u>	MCMULLEN-WEMPLE A	001	022	12N	11W	W	03		
16	173994		<u>16</u>	RASCOE	001	036	12N	11W	W	30		
17	175258		<u>16</u>	LOWREY	001	021	12N	11W	W	29		

		1		I <u> </u>						
18	176207	037803	<u>16</u>	LOWREY	002	021	12N	11W	W	23
19	176317]	<u>16</u>	RASCOE B	001	036	12N	11W	W	30
20	176742]	<u>16</u>	LOWREY	003	021	12N	11W	W	23
21	<u>177155</u>		<u>16</u>	JOHN CALLON AGENT	001	021	12N	11W	W	23
22	177776	037803	<u>16</u>	LOWERY	004	021	12N	11W	W	23
23	184981		<u>16</u>	LOWERY INVESTMENT CO B	001	021	12N	11W	W	23
24	187793]	<u>16</u>	D C FARMS	001	022	12N	11W	W	23
25	187794]	<u>16</u>	D C FARMS	002	022	12N	11W	W	30
26	194686]	<u>16</u>	VARNER	003	035	12N	11W	W	23
27	197396	041839	<u>16</u>	JOHN CALLON AGENT	003	021	12N	11W	W	23
28	201693		<u>16</u>	MCMULLEN	005	023	12N	11W	W	23
29	207639]	<u>16</u>	POWELL A	002	036	12N	11W	W	03

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Well Information

Review Well Information

WELLS

SERIAL	WEL	L NAME	WEL	L NUM	ORG	ID FIE	LD PARISH	PROD TYPE	SEC	TWN	RGE	EFFE(CTIVE DATI	E .	API NUM
152795	VAR	NER	001		<u>6040</u>	765	<u>16</u>	<u>10</u>	026	12N	11W	09/20/	1999	1703	312059400
PRMT D	ATE	SPUD DA	ΙΤΕ	STAT D	ATES	T CD	Surface Lati	itude Surfac	e Lon	gitude	Lamb	ert X	Lambert Y	Zone	Datum

WELL HISTORY

SERIAL	WELL NAME	WELL NUM	ORG ID	FIELD	ST CD	PT	WELL CLASS	EFF DATE	END DATE	STAT DATE
152795	VARNER	001	6040	7651	23	10		09/20/1999		09/20/1999
152795	VARNER	001	6040	7651	10	10		01/01/1998	09/19/1999	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1997	01/01/1998	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1996	01/01/1997	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1995	01/01/1996	11/30/1986
152795	VARNER	001	6040	7651	10	10		03/01/1994	01/01/1995	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1994	03/01/1994	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1993	01/01/1994	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1992	01/01/1993	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1991	01/01/1992	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1990	01/01/1991	11/30/1986
152795	VARNER	001	6040	7651	10	10		01/01/1989	01/01/1990	11/30/1986
152795	VARNER	001	6040	7651	10	10		11/01/1986	01/01/1989	11/30/1986
152795	VARNER	001	6040	7651	33	10		08/01/1986	11/01/1986	05/30/1984
152795	VARNER	001	6040	7651	33	10		01/01/1985	08/01/1986	05/30/1984
152795	VARNER	001	6040	7651	33	10		10/01/1984	01/01/1985	05/30/1984
152795	VARNER	001	6040	7651	33	10		06/01/1984	10/01/1984	05/30/1984

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152795	VARNER	001	6157	7651	33	10	05/01/1984 06/01/1984	05/30/1984
152795	VARNER	001	6157	7651	10	10	02/01/1980 05/01/1984	08/28/1976
152795	VARNER	001	6157	7651	10	10	09/01/1979 02/01/1980	08/28/1976
152795	VARNER	001	6157	7651	10	10	01/01/1977 09/01/1979	08/28/1976
152795	VARNER	001	6157	7651	10	10	12/01/1976 01/01/1977	12/01/1976
152795	VARNER	001	4226	7651	10	10	09/01/1976 12/01/1976	09/01/1976
152795	VARNER	001	4226	7651	10	10	07/01/1976 09/01/1976	07/01/1976

SCOUT INFO

REPORT_DATE WELL STATUS MEASURED DEPTH TRUE VERT DEPTH DETAIL

PERFORATIONS

SERIAL NUM	COMPLETION DATE	UPPER PERF	LOWER PERF	SANDS	RESERVOIR
152795	08/14/1976	2511	2594	PALUXY	

WELL TESTS

RPT TYP	TEST_DATE	RPT_DATE	OIL POT	COND	GAS DEL	WATER	BSW%	FLOW PRES	SHUTIN PRES	СНОКЕ	UPPER PERF	LOWER PERF	BOT HOLE PRES
DM- 1R	09/30/1987	10/01/1987	1			0	0	0	0		2511	2594	0
DM- 1R	01/30/1987	02/01/1987	1			0	0	0	0		2511	2594	0
DM- 1R	11/30/1986	12/01/1986	1			3	0	0	0		2511	2594	0
DM- 1R	05/28/1985	06/01/1985	1			3	75	0	0		2511	2594	0
DM- 1R	03/25/1985	04/01/1985	1			3	75	0	0		2511	2594	0
DM- 1R	11/29/1984	12/01/1984	3			7	30	0	0		2511	2594	0
DM- 1R	05/30/1984	06/01/1984	0			0	0	0	0		2511	2594	0
DM-	08/01/1979	08/01/1979	7			2	2	0	200		2511	2594	0

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1R

WELL ALLOWABLES

EFFECTIVE DATE END_DATE CODE CODE	ALLOWABLE	ESIMATED POTENTIAL	CURRENT ALLOWABLE TYPE
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WEL	L P	RO	DU	CT	ION
-----	-----	----	----	----	-----

RPT_DATE	LUW CODE	STORAGE FAC	DOC USE	WELL CNT	OPENING STK	OIL PROD	GAS PROD	DISPOSITION	CLOSING STK	PARISH
10/01/1999	034218			1	143	-143	0	0	0	DE SOTO
09/01/1999	034218			1	143	0	0	0	143	DE SOTO
08/01/1999	034218			1	143	0	0	0	143	DE SOTO
07/01/1999	034218			1	143	0	0	0	143	DE SOTO
06/01/1999	034218			1	143	0	0	0	143	DE SOTO
05/01/1999	034218			1	143	0	0	0	143	DE SOTO
04/01/1999	034218			0	143	0	0	0	143	DE SOTO
03/01/1999	034218			1	143	0	0	0	143	DE SOTO
02/01/1999	034218			1	143	0	0	0	143	DE SOTO
01/01/1999	034218			1	143	0	0	0	143	DE SOTO
12/01/1998	034218			1	143	0	0	0	143	DE SOTO
11/01/1998	034218			1	143	0	0	0	143	DE SOTO
10/01/1998	034218			1	143	0	0	0	143	DE

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09/01/1998	034218
08/01/1998	034218
07/01/1998	034218
06/01/1998	034218
05/01/1998	034218
04/01/1998	034218
03/01/1998	034218
02/01/1998	034218
01/01/1998	034218
12/01/1997	034218
11/01/1997	034218
10/01/1997	034218
09/01/1997	034218
08/01/1997	034218
07/01/1997	034218
06/01/1997	034218

						SOTO
1	143	0	0	0	143	DE SOTO
0	143	0	0	0	143	DE SOTO
0	143	0	0	0	143	DE SOTO
1	139	4	0	0	143	DE SOTO
1	135	4	0	0	139	DE SOTO
1	131	4	0	0	135	DE SOTO
1	127	4	0	0	131	DE SOTO
1	123	4	0	0	127	DE SOTO
1	119	4	0	0	123	DE SOTO
1	115	4	0	0	119	DE SOTO
1	111	4	0	0	115	DE SOTO
1	107	4	0	0	111	DE SOTO
1	103	4	0	0	107	DE SOTO
1	99	4	0	0	103	DE SOTO
1	95	4	0	0	99	DE SOTO
1	91	4	0	0	95	DE

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05/01/1997	034218
04/01/1997	034218
03/01/1997	034218
02/01/1997	034218
01/01/1997	034218
12/01/1996	034218
11/01/1996	034218
10/01/1996	034218
09/01/1996	034218
08/01/1996	034218
07/01/1996	034218
06/01/1996	034218
05/01/1996	034218
04/01/1996	034218
03/01/1996	034218
02/01/1996	034218

						SOTO
1	85	6	0	0	91	DE SOTO
1	84	1	0	0	85	DE SOTO
1	83	1	0	0	84	DE SOTO
1	82	1	0	0	83	DE SOTO
1	81	1	0	0	82	DE SOTO
1	80	1	0	0	81	DE SOTO
1	79	1	0	0	80	DE SOTO
101	78	1	0	0	79	DE SOTO
1	77	1	0	0	78	DE SOTO
1	76	1	0	0	77	DE SOTO
1	75	1	0	0	76	DE SOTO
1	74	1	0	0	75	DE SOTO
1	73	1	0	0	74	DE SOTO
1	72	1	0	0	73	DE SOTO
1	71	1	0	0	72	DE SOTO
1	70	1	О	0	71	DE

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01/01/1996	034218
12/01/1995	034218
11/01/1995	034218
10/01/1995	034218
09/01/1995	034218
08/01/1995	034218
07/01/1995	034218
06/01/1995	034218
05/01/1995	034218
04/01/1995	034218
03/01/1995	034218
02/01/1995	034218
01/01/1995	034218
12/01/1994	034218
11/01/1994	034218
10/01/1994	034218

						SOTO
1	69	1	0	0	70	DE SOTO
1	68	1	0	0	69	DE SOTO
1	67	1	0	0	68	DE SOTO
1	66	1	0	0	67	DE SOTO
1	65	1	0	0	66	DE SOTO
1	64	1	0	0	65	DE SOTO
1	63	1	0	0	64	DE SOTO
1	62	1	0	0	63	DE SOTO
1	61	1	0	0	62	DE SOTO
1	60	1	0	0	61	DE SOTO
1	59	1	0	0	60	DE SOTO
1	58	1	0	0	59	DE SOTO
1	57	1	0	0	58	DE SOTO
1	56	1	0	0	57	DE SOTO
1	55	1	0	0	56	DE SOTO
1	54	1	0	0	55	DE

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09/01/1994	034218
08/01/1994	034218
07/01/1994	034218
06/01/1994	034218
05/01/1994	034218
04/01/1994	034218
03/01/1994	034218
02/01/1994	034218
01/01/1994	034218
12/01/1993	034218
11/01/1993	034218
10/01/1993	034218
09/01/1993	034218
08/01/1993	034218
07/01/1993	034218
06/01/1993	034218

						SOTO
1	53	1	0	0	54	DE SOTO
1	52	1	0	0	53	DE SOTO
1	51	1	0	0	52	DE SOTO
1	50	1	15	0	51	DE SOTO
1	45	5	10	0	50	DE SOTO
1	40	5	60	0	45	DE SOTO
1	30	10	0	0	40	DE SOTO
1	108	13	0	91	30	DE SOTO
1	5	103	55	0	108	DE SOTO
1	61	75	75	131	5	DE SOTO
1	60	1	63	0	61	DE SOTO
1	59	1	0	0	60	DE SOTO
1	110	1	64	52	59	DE SOTO
1	109	1	40	0	110	DE SOTO
1	108	1	42	0	109	DE SOTO
1	107	1	60	0	108	DE

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05/01/1993	034218
04/01/1993	034218
03/01/1993	034218
02/01/1993	034218
01/01/1993	034218
12/01/1992	034218
11/01/1992	034218
10/01/1992	034218
09/01/1992	034218
08/01/1992	034218
07/01/1992	034218
06/01/1992	034218
05/01/1992	034218
04/01/1992	034218
03/01/1992	034218
02/01/1992	034218

						SOTO
1	106	1	54	0	107	DE SOTO
1	105	1	44	0	106	DE SOTO
1	104	1	42	0	105	DE SOTO
1	103	1	42	0	104	DE SOTO
1	102	1	0	0	103	DE SOTO
1	101	1	0	0	102	DE SOTO
0	100	1	0	0	101	DE SOTO
1	99	1	0	0	100	DE SOTO
1	98	1	0	0	99	DE SOTO
1	97	1	0	0	98	DE SOTO
1	96	1	13	0	97	DE SOTO
1	95	1	15	0	96	DE SOTO
1	94	1	10	0	95	DE SOTO
1	93	1	16	0	94	DE SOTO
1	92	1	0	0	93	DE SOTO
1	91	1	0	0	92	DE

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01/01/1992	034218
12/01/1991	034218
11/01/1991	034218
10/01/1991	034218
09/01/1991	034218
08/01/1991	034218
07/01/1991	034218
06/01/1991	034218
05/01/1991	034218
04/01/1991	034218
03/01/1991	034218
02/01/1991	034218
01/01/1991	034218
12/01/1990	034218
11/01/1990	034218
10/01/1990	034218

						SOTO
1	90	1	0	0	91	DE SOTO
1	89	1	6	0	90	DE SOTO
1	88	1	5	0	89	DE SOTO
1	87	1	9	0	88	DE SOTO
1	86	1	11	0	87	DE SOTO
1	85	1	16	0	86	DE SOTO
1	84	1	4	0	85	DE SOTO
1	83	1	23	0	84	DE SOTO
1	82	1	21	0	83	DE SOTO
1	81	1	26	0	82	DE SOTO
1	80	1	31	0	81	DE SOTO
1	79	1	20	0	80	DE SOTO
1	78	1	35	0	79	DE SOTO
1	77	1	15	0	78	DE SOTO
1	76	1	39	0	77	DE SOTO
1	75	1	34	0	76	DE

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09/01/1990	034218
08/01/1990	034218
07/01/1990	034218
06/01/1990	034218
05/01/1990	034218
04/01/1990	034218
03/01/1990	034218
02/01/1990	034218
01/01/1990	034218
12/01/1989	034218
11/01/1989	034218
10/01/1989	034218
09/01/1989	034218
08/01/1989	034218
07/01/1989	034218
06/01/1989	034218

						SOTO
1	74	1	30	0	75	DE SOTO
1	73	1	39	0	74	DE SOTO
1	72	1	51	0	73	DE SOTO
1	71	1	80	0	72	DE SOTO
1	70	1	177	0	71	DE SOTO
1	69	1	126	0	70	DE SOTO
1	68	1	206	0	69	DE SOTO
1	67	1	174	0	68	DE SOTO
1	66	1	267	0	67	DE SOTO
1	65	1	168	0	66	DE SOTO
1	64	1	110	0	65	DE SOTO
1	63	1	144	0	64	DE SOTO
1	62	1	40	0	63	DE SOTO
1	61	1	100	0	62	DE SOTO
1	60	1	93	0	61	DE SOTO
1	59	1	150	0	60	DE

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05/01/1989	034218
04/01/1989	034218
03/01/1989	034218
02/01/1989	034218
01/01/1989	034218
12/01/1988	034218
11/01/1988	034218
10/01/1988	034218
09/01/1988	034218
08/01/1988	034218
07/01/1988	034218
06/01/1988	034218
05/01/1988	034218
04/01/1988	034218
03/01/1988	034218
02/01/1988	034218

						SOTO
1	58	1	23	0	59	DE SOTO
1	57	1	0	0	58	DE SOTO
1	56	1	0	0	57	DE SOTO
1	55	1	0	0	56	DE SOTO
1	54	1	0	0	55	DE SOTO
1	53	1	0	0	54	DE SOTO
1	52	1	0	0	53	DE SOTO
1	51	1	0	0	52	DE SOTO
1	51	0	0	0	51	DE SOTO
1	50	1	0	0	51	DE SOTO
1	49	1	0	0	50	DE SOTO
1	48	1	25	0	49	DE SOTO
1	47	1	0	0	48	DE SOTO
1	46	1	6	0	47	DE SOTO
1	45	1	11	0	46	DE SOTO
1	44	1	0	0	45	DE

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01/01/1988	034218
12/01/1987	034218
11/01/1987	034218
10/01/1987	034218
09/01/1987	034218
08/01/1987	034218
07/01/1987	034218
06/01/1987	034218
05/01/1987	034218
04/01/1987	034218
03/01/1987	034218
02/01/1987	034218
01/01/1987	034218
12/01/1986	034218
11/01/1986	034218
10/01/1986	034218

						SOTO
1	43	1	0	0	44	DE SOTO
1	42	1	0	0	43	DE SOTO
1	41	1	0	0	42	DE SOTO
1	38	3	22	0	41	DE SOTO
1	37	1	165	0	38	DE SOTO
1	35	2	153	0	37	DE SOTO
1	24	11	210	0	35	DE SOTO
1	79	20	188	75	24	DE SOTO
1	44	35	204	0	79	DE SOTO
1	43	1	531	0	44	DE SOTO
1	34	9	386	0	43	DE SOTO
1	24	10	335	0	34	DE SOTO
1	123	17	327	116	24	DE SOTO
2	108	15	171	0	123	DE SOTO
2	98	10	143	0	108	DE SOTO
2	79	19	106	0	98	DE

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09/01/1986	034218
08/01/1986	034218
07/01/1986	034218
06/01/1986	034218
05/01/1986	034218
04/01/1986	034218
03/01/1986	034218
02/01/1986	034218
01/01/1986	034218
12/01/1985	034218
11/01/1985	034218
10/01/1985	034218
09/01/1985	034218
08/01/1985	034218
07/01/1985	034218
06/01/1985	034218

						SOTO
2	58	21	71	0	79	DE SOTO
2	57	1	106	0	58	DE SOTO
2	53	4	82	0	57	DE SOTO
0	53	0	63	0	53	DE SOTO
2	35	18	57	0	53	DE SOTO
2	19	16	89	0	35	DE SOTO
2	80	17	115	78	19	DE SOTO
2	58	22	140	0	80	DE SOTO
0	58	0	124	0	58	DE SOTO
2	19	39	179	0	58	DE SOTO
2	42	5	0	28	19	DE SOTO
2	40	2	0	0	42	DE SOTO
2	22	18	0	0	40	DE SOTO
2	55	18	0	51	22	DE SOTO
2	40	15	0	0	55	DE SOTO
2	108	13	0	81	40	DE

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05/01/1985	034218
04/01/1985	034218
03/01/1985	034218
02/01/1985	034218
01/01/1985	034218
12/01/1984	034218
11/01/1984	034218
10/01/1984	034218
09/01/1984	034218
08/01/1984	034218
07/01/1984	034218
05/01/1984	034218
04/01/1984	034218
03/01/1984	034218
02/01/1984	034218
01/01/1984	034218

						SOTO
2	44	64	0	0	108	DE SOTO
2	25	19	0	0	44	DE SOTO
2	95	2	0	72	25	DE SOTO
0	95	0	0	О	95	DE SOTO
0	95	0	0	О	95	DE SOTO
2	19	152	0	76	95	DE SOTO
2	61	31	0	73	19	DE SOTO
2	172	69	0	180	61	DE SOTO
2	108	64	0	0	172	DE SOTO
2	33	75	0	0	108	DE SOTO
2	0	33	0	0	33	DE SOTO
0	0	0	0	0	0	DE SOTO
0	0	0	0	О	0	DE SOTO
0	0	0	0	0	0	DE SOTO
0	0	0	0	0	0	DE SOTO
0	О	0	0	О	0	DE

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12/01/1983	034218
11/01/1983	034218
10/01/1983	034218
09/01/1983	034218
08/01/1983	034218
07/01/1983	034218
06/01/1983	034218
05/01/1983	034218
04/01/1983	034218
03/01/1983	034218
02/01/1983	034218
01/01/1983	034218
12/01/1982	034218
11/01/1982	034218
10/01/1982	034218
09/01/1982	034218

						SOTO
0	0	0	0	0	О	DE SOTO
0	0	0	0	0	О	DE SOTO
0	0	0	0	0	О	DE SOTO
0	0	0	0	0	О	DE SOTO
0	292	0	0	292	О	DE SOTO
2	278	14	0	0	292	DE SOTO
0	278	0	0	О	278	DE SOTO
0	278	0	0	0	278	DE SOTO
2	248	30	0	0	278	DE SOTO
0	248	0	0	0	248	DE SOTO
2	228	20	0	О	248	DE SOTO
2	208	20	0	0	228	DE SOTO
2	208	12	0	О	220	DE SOTO
2	285	30	0	107	208	DE SOTO
2	273	12	0	0	285	DE SOTO
0	273	0	0	О	273	DE

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08/01/1982	034218
07/01/1982	034218
06/01/1982	034218
05/01/1982	034218
04/01/1982	034218
03/01/1982	034218
02/01/1982	034218
01/01/1982	034218
12/01/1981	034218
11/01/1981	034218
10/01/1981	034218
09/01/1981	034218
08/01/1981	034218
07/01/1981	034218
06/01/1981	034218
05/01/1981	034218

						SOTO
0	273	0	0	0	273	DE SOTO
0	273	0	0	0	273	DE SOTO
0	273	0	0	0	273	DE SOTO
2	261	12	0	0	273	DE SOTO
2	249	12	0	0	261	DE SOTO
2	227	22	0	0	249	DE SOTO
2	210	50	0	33	227	DE SOTO
2	176	34	0	0	210	DE SOTO
2	217	42	0	83	176	DE SOTO
2	136	81	0	0	217	DE SOTO
2	14	122	0	0	136	DE SOTO
2	113	120	0	219	14	DE SOTO
2	51	62	0	0	113	DE SOTO
2	19	32	0	0	51	DE SOTO
2	109	80	0	170	19	DE SOTO
2	47	62	0	0	109	DE

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04/01/1981	034218
03/01/1981	034218
02/01/1981	034218
01/01/1981	034218
12/01/1980	034218
11/01/1980	034218
10/01/1980	034218
09/01/1980	034218
08/01/1980	034218
07/01/1980	034218
06/01/1980	034218
05/01/1980	034218
04/01/1980	034218
03/01/1980	034218
02/01/1980	034218
01/01/1980	034218

						SOTO
2	88	20	0	61	47	DE SOTO
2	208	86	0	206	88	DE SOTO
2	148	60	0	0	208	DE SOTO
2	88	60	0	0	148	DE SOTO
2	194	39	0	145	88	DE SOTO
2	142	52	0	0	194	DE SOTO
0	142	0	0	0	142	DE SOTO
2	271	10	0	139	142	DE SOTO
2	249	22	0	0	271	DE SOTO
2	235	14	0	0	249	DE SOTO
2	220	15	0	0	235	DE SOTO
0	220	0	0	0	220	DE SOTO
2	215	5	0	0	220	DE SOTO
2	195	20	0	0	215	DE SOTO
2	181	14	0	0	195	DE SOTO
0	181	0	О	О	181	DE

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12/01/1979	034218
11/01/1979	034218
10/01/1979	034218
09/01/1979	034218
08/01/1979	034218
07/01/1979	034218
06/01/1979	034218
05/01/1979	034218
04/01/1979	034218
03/01/1979	034218
02/01/1979	034218
01/01/1979	034218
12/01/1978	034218
11/01/1978	034218
10/01/1978	034218
09/01/1978	034218

						SOTO
2	170	11	0	0	181	DE SOTO
2	162	8	0	0	170	DE SOTO
2	144	18	0	0	162	DE SOTO
2	411	16	0	283	144	DE SOTO
2	399	12	0	0	411	DE SOTO
0	399	0	0	0	399	DE SOTO
2	367	32	0	0	399	DE SOTO
2	335	32	0	0	367	DE SOTO
2	303	32	0	0	335	DE SOTO
2	271	32	0	0	303	DE SOTO
2	239	32	0	0	271	DE SOTO
0	239	0	0	0	239	DE SOTO
0	239	0	0	0	239	DE SOTO
0	239	0	0	0	239	DE SOTO
0	239	0	0	0	239	DE SOTO
0	239	0	0	О	239	DE

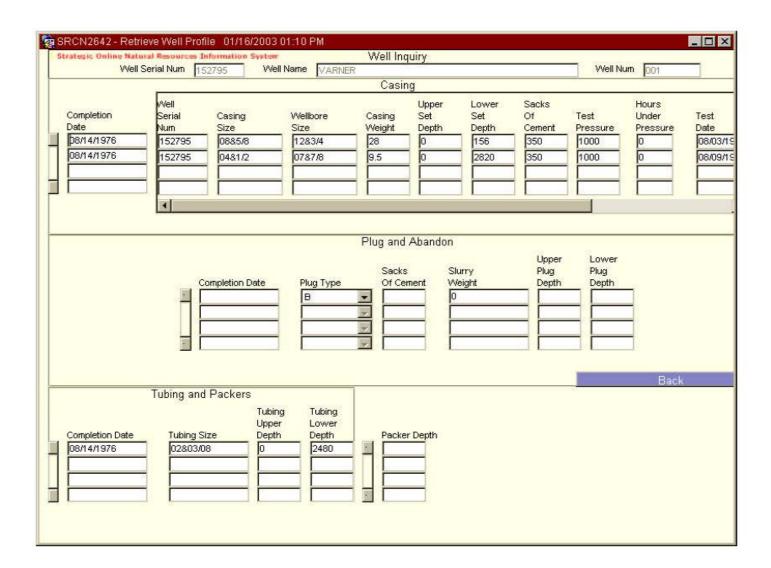
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08/01/1978	034218
07/01/1978	034218
06/01/1978	034218
05/01/1978	034218
04/01/1978	034218
03/01/1978	034218
02/01/1978	034218
01/01/1978	034218
12/01/1977	034218
11/01/1977	034218
10/01/1977	034218
09/01/1977	034218
08/01/1977	034218
07/01/1977	034218
06/01/1977	034218
05/01/1977	034218

						SOTO
0	239	0	0	О	239	DE SOTO
0	239	0	0	О	239	DE SOTO
2	239	320	0	320	239	DE SOTO
0	239	0	0	О	239	DE SOTO
0	239	0	0	О	239	DE SOTO
0	239	0	0	0	239	DE SOTO
2	239	176	0	176	239	DE SOTO
0	239	0	0	О	239	DE SOTO
0	239	0	0	О	239	DE SOTO
2	239	168	0	168	239	DE SOTO
2	239	174	0	174	239	DE SOTO
2	239	100	0	100	239	DE SOTO
0	239	0	0	О	239	DE SOTO
2	228	186	0	175	239	DE SOTO
2	182	224	0	178	228	DE SOTO
2	131	219	0	168	182	DE

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								SOTO
04/01/1977	034218	2	72	236	0	177	131	DE SOTO
03/01/1977	034218	1	167	246	0	341	72	DE SOTO
02/01/1977	034218	1	169	339	0	341	167	DE SOTO
01/01/1977	034218	1	15	154	0	0	169	DE SOTO



DM-1R 09/3 DM-1R 01/3 DM-1R 11/3 DM-1R 05/2 DM-1R 03/2	80/1987 80/1987 80/1986 80/1985	Report Date 10/01/1987 02/01/1987 12/01/1986 06/01/1985	Oil Potential 1	Condensate	Gas Deliverability	Water 0	BSW%	Flowing Pressure
Type Test DM-1R 09/3 DM-1R 01/3 DM-1R 11/3 DM-1R 05/2 DM-1R 03/2	80/1987 80/1987 80/1986 88/1985	10/01/1987 02/01/1987 12/01/1986	Potential 1 1 1	Condensate		0	0	Pressure 0
DM-1R 09/3 DM-1R 01/3 DM-1R 11/3 DM-1R 05/2 DM-1R 03/2	80/1987 80/1987 80/1986 88/1985	10/01/1987 02/01/1987 12/01/1986	1 1	Condensate	Deliverability	0	0	0
DM-1R 01/3 DM-1R 11/3 DM-1R 05/2 DM-1R 03/2	80/1987 80/1986 28/1985	02/01/1987 12/01/1986	1			0		
DM-1R 11/3 DM-1R 05/2 DM-1R 03/2	80/1986 28/1985	12/01/1986	1				0	10
DM-1R 05/2 DM-1R 03/2	28/1985		8					
OM-1R 03/2		06/01/1985				3	0	0
0012	25/1085		1			3	75	0
MM 4 P 1 1 14 4 22		04/01/1985	1	1		3	75	0
		12/01/1984	3			7	30	0
		06/01/1984	0	3		0	0	0
08/0	01/1979	08/01/1979	7			2	2	0
	Completion Date	Upper Perforation 2511	Lower Perforation 2594	Perforations Sand PALUXY			Reservo	sir

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Well Information

Review Well Information

WELLS

SERIAL	WELL NAME	WELL NUM	ORG ID	FIELD	PARISH	PROD TYPE	SEC	TWN	RGE	EFFECTIVE DATE	API NUM
152863	VARNER	002	<u>6040</u>	<u>7651</u>	<u>16</u>	<u>10</u>	034	12N	11W	09/20/1999	17031205960000
PRMT D	ATE SPUD DA	TE STAT D	ATE ST	CD Sui	rface Lati	itude Surface	Long	gitude	Lam	bert X Lambert Y 2	Zone Datum

PRMT DATE	SPUD DATE	STAT DATE	ST CD	Surface Latitude	Surface Longitude	Lambert X	Lambert Y	Zone	Datum
08/12/1976	08/12/1976	09/20/1999	<u>23</u>	31-59-18.959	93-28-39.719	1696882	482216	N	NAD-27

WELL HISTORY

SERIAL	WELL NAME	WELL NUM	ORG ID	FIELD	ST CD	PT	WELL CLASS	EFF DATE	END DATE	STAT DATE
152863	VARNER	002	6040	7651	23	10		09/20/1999		09/20/1999
152863	VARNER	002	6040	7651	10	10		01/01/1998	09/19/1999	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1997	01/01/1998	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1996	01/01/1997	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1995	01/01/1996	11/30/1986
152863	VARNER	002	6040	7651	10	10		03/01/1994	01/01/1995	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1994	03/01/1994	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1993	01/01/1994	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1992	01/01/1993	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1991	01/01/1992	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1990	01/01/1991	11/30/1986
152863	VARNER	002	6040	7651	10	10		01/01/1989	01/01/1990	11/30/1986
152863	VARNER	002	6040	7651	10	10		11/01/1986	01/01/1989	11/30/1986
152863	VARNER	002	6040	7651	33	10		08/01/1986	11/01/1986	05/30/1984
152863	VARNER	002	6040	7651	33	10		01/01/1985	08/01/1986	05/30/1984
152863	VARNER	002	6040	7651	33	10		10/01/1984	01/01/1985	05/30/1984
152863	VARNER	002	6040	7651	33	10		06/01/1984	10/01/1984	05/30/1984

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152863	VARNER	002	6157	7651	33	10	05/01/1984	06/01/1984	05/30/1984
152863	VARNER	002	6157	7651	10	10	02/01/1980	05/01/1984	09/01/1979
152863	VARNER	002	6157	7651	10	10	09/01/1979	02/01/1980	09/01/1979
152863	VARNER	002	6157	7651	10	10	05/01/1977	09/01/1979	04/24/1977
152863	VARNER	002	6157	7651	10	10	12/01/1976	05/01/1977	12/01/1976
152863	VARNER	002	4226	7651	10	10	10/01/1976	12/01/1976	10/01/1976
152863	VARNER	002	4226	7651	01	00	08/01/1976	10/01/1976	08/12/1976

SCOUT INFO

REPORT_DATE WELL STATUS MEASURED DEPTH TRUE VERT DEPTH DETAIL

PERFORATIONS

SERIAL NUM	COMPLETION DATE	UPPER PERF	LOWER PERF	SANDS	RESERVOIR
152863	10/01/1976	2508	2659	PALUXY	
152863	10/01/1976	2568	2657		

WELL TESTS

RPT TYP	TEST_DATE	RPT_DATE	OIL POT	COND	GAS DEL	WATER	BSW%	FLOW PRES	SHUTIN PRES	СНОКЕ	UPPER PERF	LOWER PERF	BOT HOLE PRES
DT-1	05/25/1988	06/01/1988		0	5	3		0	0		2508	2659	0
DT-1	08/30/1987	09/01/1987		0	5	3		0	0		2508	2659	0
DT-1	02/27/1987	03/01/1987		0	10	3		0	0		2508	2659	0
DM- 1R	11/30/1986	12/01/1986	1			3	0	0	0		2508	2659	0
DM- 1R	05/28/1985	06/01/1985	4			4	50	0	0		2508	2659	0
DM- 1R	03/25/1985	04/01/1985	4			4	50	0	0		2508	0	0
DM- 1R	11/29/1984	12/01/1984	4			4	50	0	0		2508	0	0
DM- 1R	05/30/1984	06/01/1984	0			0	0	0	0		2508	0	0

WELL ALLOWABLES

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EFFECTIVE DATE	END_DATE	LUW CODE	LUW TYPE CODE	ALLOWABLE	ESIMATED POTENTIAL	CURRENT ALLOWABLE TYPE
04/01/1977	04/20/1977	034218	1	25	0	1

WELL PRODUCTION

RPT_DATE	LUW CODE	STORAGE FAC	DOC USE	WELL CNT	OPENING STK	OIL PROD	GAS PROD	DISPOSITION	CLOSING STK	PARISH
10/01/1999	034218			1	143	-143	0	0	0	DE SOTO
09/01/1999	034218			1	143	0	0	0	143	DE SOTO
08/01/1999	034218			1	143	0	0	0	143	DE SOTO
07/01/1999	034218			1	143	0	0	0	143	DE SOTO
06/01/1999	034218			1	143	0	0	0	143	DE SOTO
05/01/1999	034218			1	143	0	0	0	143	DE SOTO
04/01/1999	034218			0	143	0	0	0	143	DE SOTO
03/01/1999	034218			1	143	0	0	0	143	DE SOTO
02/01/1999	034218			1	143	0	0	0	143	DE SOTO
01/01/1999	034218			1	143	0	0	0	143	DE SOTO
12/01/1998	034218			1	143	0	0	0	143	DE SOTO
11/01/1998	034218			1	143	0	0	0	143	DE SOTO
10/01/1998	034218			1	143	0	0	0	143	DE SOTO

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09/01/1998	03/218
09/01/1990	034210
08/01/1998	034218
07/01/1998	034218
06/01/1998	034218
05/01/1998	034218
04/01/1998	034218
03/01/1998	034218
02/01/1998	034218
01/01/1998	034218
12/01/1997	034218
11/01/1997	034218
10/01/1997	034218
09/01/1997	034218
08/01/1997	034218
07/01/1997	034218
06/01/1997	034218

1	143	0	0	0	143	DE SOTO
0	143	0	0	0	143	DE SOTO
0	143	0	0	0	143	DE SOTO
1	139	4	0	0	143	DE SOTO
1	135	4	0	0	139	DE SOTO
1	131	4	0	0	135	DE SOTO
1	127	4	0	0	131	DE SOTO
1	123	4	0	0	127	DE SOTO
1	119	4	0	0	123	DE SOTO
1	115	4	0	0	119	DE SOTO
1	111	4	0	0	115	DE SOTO
1	107	4	0	0	111	DE SOTO
1	103	4	0	0	107	DE SOTO
1	99	4	0	0	103	DE SOTO
1	95	4	0	0	99	DE SOTO
1	91	4	0	0	95	DE SOTO

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1	11
05/01/1997	034218
04/01/1997	034218
03/01/1997	034218
02/01/1997	034218
01/01/1997	034218
12/01/1996	034218
11/01/1996	034218
10/01/1996	034218
09/01/1996	034218
08/01/1996	034218
07/01/1996	034218
06/01/1996	034218
05/01/1996	034218
04/01/1996	034218
03/01/1996	034218
02/01/1996	034218

1	85	6	0	0	91	DE SOTO
1	84	1	0	0	85	DE SOTO
1	83	1	0	0	84	DE SOTO
1	82	1	0	0	83	DE SOTO
1	81	1	0	0	82	DE SOTO
1	80	1	0	0	81	DE SOTO
1	79	1	0	0	80	DE SOTO
101	78	1	0	0	79	DE SOTO
1	77	1	0	0	78	DE SOTO
1	76	1	0	0	77	DE SOTO
1	75	1	0	0	76	DE SOTO
1	74	1	0	0	75	DE SOTO
1	73	1	0	0	74	DE SOTO
1	72	1	0	0	73	DE SOTO
1	71	1	0	0	72	DE SOTO
1	70	1	0	0	71	DE SOTO

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01/01/1996	034218
12/01/1995	034218
11/01/1995	034218
10/01/1995	034218
09/01/1995	034218
08/01/1995	034218
07/01/1995	034218
06/01/1995	034218
05/01/1995	034218
04/01/1995	034218
03/01/1995	034218
02/01/1995	034218
01/01/1995	034218
12/01/1994	034218
11/01/1994	034218
10/01/1994	034218

1	69	1	0	О	70	DE SOTO
1	68	1	0	0	69	DE SOTO
1	67	1	0	0	68	DE SOTO
1	66	1	0	0	67	DE SOTO
1	65	1	0	0	66	DE SOTO
1	64	1	0	0	65	DE SOTO
1	63	1	0	0	64	DE SOTO
1	62	1	0	0	63	DE SOTO
1	61	1	0	0	62	DE SOTO
1	60	1	0	0	61	DE SOTO
1	59	1	0	0	60	DE SOTO
1	58	1	0	0	59	DE SOTO
1	57	1	0	0	58	DE SOTO
1	56	1	0	0	57	DE SOTO
1	55	1	0	0	56	DE SOTO
1	54	1	0	0	55	DE SOTO

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1	п
09/01/1994	034218
08/01/1994	034218
07/01/1994	034218
06/01/1994	034218
05/01/1994	034218
04/01/1994	034218
03/01/1994	034218
02/01/1994	034218
01/01/1994	034218
12/01/1993	034218
11/01/1993	034218
10/01/1993	034218
09/01/1993	034218
08/01/1993	034218
07/01/1993	034218
06/01/1993	034218

1	53	1	0	0	54	DE SOTO
1	52	1	0	0	53	DE SOTO
1	51	1	0	0	52	DE SOTO
1	50	1	15	0	51	DE SOTO
1	45	5	10	0	50	DE SOTO
1	40	5	60	0	45	DE SOTO
1	30	10	0	0	40	DE SOTO
1	108	13	0	91	30	DE SOTO
1	5	103	55	0	108	DE SOTO
1	61	75	75	131	5	DE SOTO
1	60	1	63	0	61	DE SOTO
1	59	1	0	0	60	DE SOTO
1	110	1	64	52	59	DE SOTO
1	109	1	40	0	110	DE SOTO
1	108	1	42	0	109	DE SOTO
1	107	1	60	0	108	DE SOTO

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05/01/1993	034218
04/01/1993	034218
03/01/1993	034218
02/01/1993	034218
01/01/1993	034218
12/01/1992	034218
11/01/1992	034218
10/01/1992	034218
09/01/1992	034218
08/01/1992	034218
07/01/1992	034218
06/01/1992	034218
05/01/1992	034218
04/01/1992	034218
03/01/1992	034218
02/01/1992	

1	106	1	54	0	107	DE SOTO
1	105	1	44	0	106	DE SOTO
1	104	1	42	0	105	DE SOTO
1	103	1	42	0	104	DE SOTO
1	102	1	0	0	103	DE SOTO
1	101	1	0	0	102	DE SOTO
0	100	1	0	0	101	DE SOTO
1	99	1	0	0	100	DE SOTO
1	98	1	0	0	99	DE SOTO
1	97	1	0	0	98	DE SOTO
1	96	1	13	0	97	DE SOTO
1	95	1	15	0	96	DE SOTO
1	94	1	10	0	95	DE SOTO
1	93	1	16	0	94	DE SOTO
1	92	1	0	0	93	DE SOTO
1	91	1	0	0	92	DE SOTO

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1	11
01/01/1992	034218
12/01/1991	034218
11/01/1991	034218
10/01/1991	034218
09/01/1991	034218
08/01/1991	034218
07/01/1991	034218
06/01/1991	034218
05/01/1991	034218
04/01/1991	034218
03/01/1991	034218
02/01/1991	034218
01/01/1991	034218
12/01/1990	034218
11/01/1990	034218
10/01/1990	034218

1	90	1	0	О	91	DE SOTO
1	89	1	6	0	90	DE SOTO
1	88	1	5	0	89	DE SOTO
1	87	1	9	0	88	DE SOTO
1	86	1	11	0	87	DE SOTO
1	85	1	16	0	86	DE SOTO
1	84	1	4	0	85	DE SOTO
1	83	1	23	0	84	DE SOTO
1	82	1	21	0	83	DE SOTO
1	81	1	26	0	82	DE SOTO
1	80	1	31	0	81	DE SOTO
1	79	1	20	0	80	DE SOTO
1	78	1	35	0	79	DE SOTO
1	77	1	15	0	78	DE SOTO
1	76	1	39	0	77	DE SOTO
1	75	1	34	0	76	DE SOTO

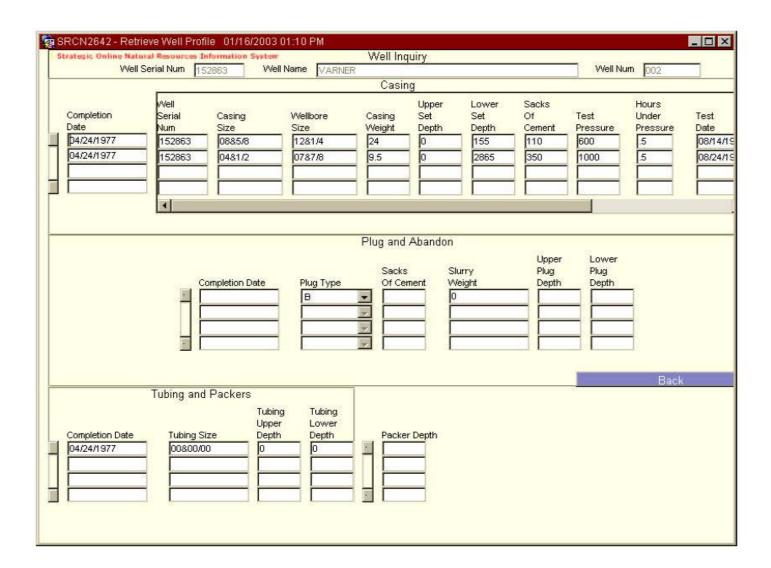
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09/01/1990	024219
09/01/1990	034210
08/01/1990	034218
07/01/1990	034218
06/01/1990	034218
05/01/1990	034218
04/01/1990	034218
03/01/1990	034218
02/01/1990	034218
01/01/1990	034218
12/01/1989	034218
11/01/1989	034218
10/01/1989	034218
09/01/1989	034218
08/01/1989	034218
07/01/1989	034218
06/01/1989	034218

1	74	1	30	0	75	DE SOTO
1	73	1	39	0	74	DE SOTO
1	72	1	51	0	73	DE SOTO
1	71	1	80	0	72	DE SOTO
1	70	1	177	0	71	DE SOTO
1	69	1	126	0	70	DE SOTO
1	68	1	206	0	69	DE SOTO
1	67	1	174	0	68	DE SOTO
1	66	1	267	0	67	DE SOTO
1	65	1	168	0	66	DE SOTO
1	64	1	110	0	65	DE SOTO
1	63	1	144	0	64	DE SOTO
1	62	1	40	0	63	DE SOTO
1	61	1	100	0	62	DE SOTO
1	60	1	93	0	61	DE SOTO
1	59	1	150	0	60	DE SOTO

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05/01/1989	034218	1	58	1	23	0	59	DE SOTO
04/01/1989	034218	1	57	1	0	0	58	DE SOTO
03/01/1989	034218	1	56	1	0	0	57	DE SOTO
02/01/1989	034218	1	55	1	0	0	56	DE SOTO
01/01/1989	034218	1	54	1	0	0	55	DE SOTO
12/01/1988	034218	1	53	1	0	0	54	DE SOTO



Report								
				Tests				
uno	1		Oil		Gas			Flowing
	Test Date	Report Date	Potential	Condensate	Deliverability	Water	BSW%	Pressure
DT-1	05/25/1988	06/01/1988		0	5	3		0
DT-1	08/30/1987	09/01/1987		0	5	3		0
DT-1	02/27/1987	03/01/1987		0	10	3		0
DM-1R	11/30/1986	12/01/1986	1			3	0	0
DM-1R	05/28/1985	06/01/1985	4			4	50	0
DM-1R	03/25/1985	04/01/1985	4			4	50	0
M-1R	11/29/1984	12/01/1984	4			4	50	0
DM-1R	05/30/1984	06/01/1984	0			0	0	0
1				100	14			
	Completion Date	Upper e Perforation 2508	Lower Perforation 2659	Perforations Sand PALUXY			Reservo	oir
	10/01/1976	2568	2657					

Wells Page 1 of 1

Well Information

Review Well Information

W	Ε	L	L	S
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SERIAL	WELL NAME	WELL NUM	ORG ID	FIELD	PARISH	PROD TYPE	SEC	TWN	RGE	EFFECTIVE DATE	API NUM
194686	VARNER	003	<u>6040</u>	<u>7651</u>	<u>16</u>	<u>00</u>	035	12N	11W	09/20/1999	17031224140000
PRMT DATE SPUD DATE STAT DATE ST CD Surface Latitude Surface Longitude Lambert X Lambert Y Zone Datum											

PRMT DATE SPUD	DATE STAT DATE S	ST CD Surface	Latitude Surface L	ongitude Lambert X	Lambert Y Z	one Datum
09/06/1984	09/20/1999 23	31-59-2	2.38 93-28-24.4	1698200	482550 N	NAD-27

WELL HISTORY

SERIAL	WELL NAME	WELL NUM	ORG ID	FIELD	ST CD	РТ	WELL CLASS	EFF DATE	END DATE	STAT DATE
194686	VARNER	003	6040	7651	23	00		09/20/1999		09/20/1999
194686	VARNER	003	6040	7651	33	00		11/01/1984	09/19/1999	11/30/1984
11144686	TRANS GULF PETR CORP- VARNER	001	9999	7651	01	00		09/01/1984	11/01/1984	09/06/1984

SCOUT INFO

REPORT_DATE WELL STATUS MEASURED DEPTH TRUE VERT DEPTH DETAIL

PERFORATIONS

SERIAL NUM COMPLETION DATE UPPER PERF LOWER PERF SANDS RESERVOIR

WELL TESTS

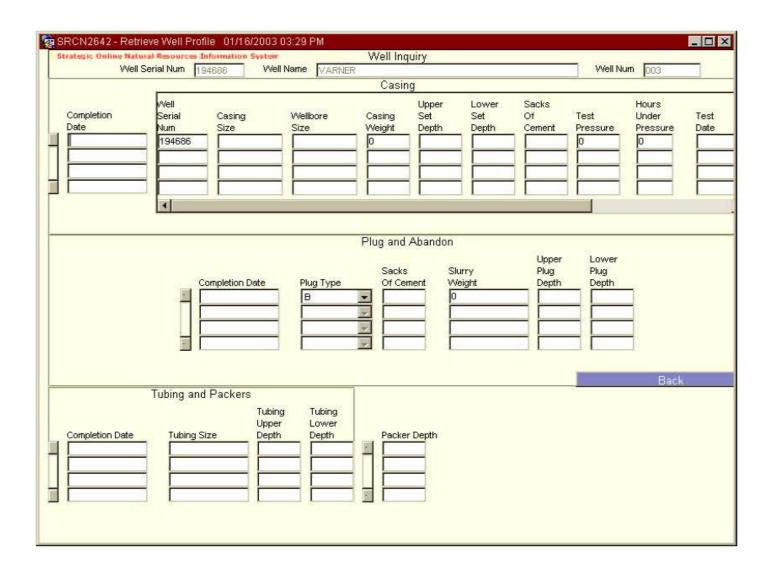
RPT FYP	TEST_DATE	RPT_DATE	OIL	COND	GAS DEL	WATER	BSW%	FLOW PRES	SHUTIN PRES	СНОКЕ	UPPER PERF	LOWER PERF	BOT HOLE
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WELL ALLOWABLES

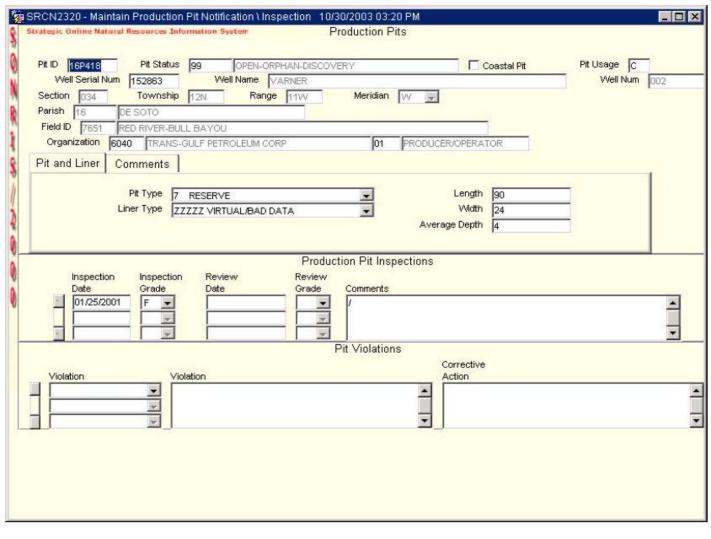
	LUW LUW TYPE CODE CODE	ALLOWABLE ESIMATED POTENTIAL	CURRENT ALLOWABLE TYPE
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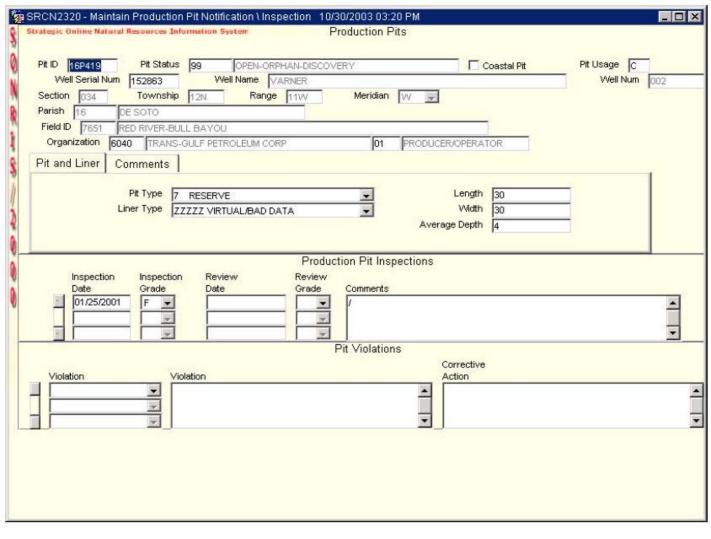
WELL PRODUCTION

DDT DATE	LUW	STORAGE	DOC	WELL	OPENING	OIL	GAS	DISPOSITION	CLOSING	PARISH
RPT_DATE	CODE	FAC	USE	CNT	STK	PROD	PROD	DISPOSITION	STK	FARISH



ategic on	Well Serial Num 1	94686 Well N	ame VARNER	Well Inquiry			Well Num	003
	-			Tests		10	-	
Report Type	Test Date	Report Date	Oil Potential	Condensate 0	Gas Deliverability	Water 0	BSW%	Flowing Pressure
	1		. 1	10. 0 	7. i liter			
	Completion Date	Upper Perforation	Lower Perforation	Perforations Sand			Reservo	oir
								Back







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	Red Riven Bull Bayou
	▼ BERIAL NO
	PRODUCINE INTERVA
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	Palexy
•	District Office of the Office of Conservation in which the well in

OFFICE OF CONSERVATION MELL I STORY AND WORL REPRIT Three hypewritten copies of this report must be filled with the icoated willtin (werry (20) days of tas date of completies (NDTE) if not properly completed and signed this report will be returned. LEASE AND WILL DATE MODBUGT AII 31 INASTIVE DRY ROLE FOR UT 2. IF RECOMPLETION ENTE CODS_\$7730; CO POLC 8/14 2 T HEW WELL 32 NACTIVE DEFINATE NO FUT UTIL
34 AND INE WA TING ON PIPELINE
37 NACTIVE WAITING ON MARKET MEGOVPLETION STHER 8/14/76 Monte Carlo Exploration Inc. 1401 Bellaire Blud Bossier (ity Le. VELL HAVE **LL # 1 PARIS CATE PERMIT ISSUED ste 26 198./2 N DeSoto 8/4/76 ENTE SPUDSED SECTION OF PROPERTY TOTAL SEPTH жто 8/3/76 2980 AMOUND SLEVATION GASING PEAD TLANGE THEYATION OBTANCE FROM RKR TO CH-٥, CA & ABOL TURNED INTO TANTS MATER A MINIT PLE COMPLETION, FURNIS, A SEPARATE SECONT FOR SACH HOMPLEYICK SENSUE, DUAL OR TRIPLE COMPLETIONS WAS WELL CHRESTIONAL -TECRY YEARIN THE LARGE SAW WENC 3 COPICS FIRM WITH DATE FLEE na TIPE OF STRETAICAL ON CINEN LOUS THE FORGLE LOSS FLIES WITH SPRICE OF CONSCIVATIONS OATS HIES 230 8/9/76 BASING, LIVER AND THRING BETOFR HAURS JONER FRESSLAE DATE TESTED (AU DO YY) CABIEX HD_5 5 ZE GAS 40 UESSHT CETII TEST PERSONAL NAME OF YEAR WITHERS - STATE P CLINE CONSCRIME OF STREET OF STREET 29# 3 **5/8** 12 3/4 a 156 /000 <u>3/3/76</u> 350 Patrick 9.5.0 2820 250 1000 8/9/76 164 IRI TIIR VS 01251 CCPT!I 3" TUDING 2480 DENTH OF PAGREFIE WIT AT PERPERTION ON KE-SOUPLISTICS OATA IN. TIPL PRODUCTION SAS VOLUME BIICKS S SE PRODUC MS METHOR 40,56 MK F/DXY FLOW MS TOO NO PROSCURE SHUT - La Tubigo Priesques MATER HAGSUCTION 850W 33 COMPANY REPRESENTATIVE -28-76 чио да портината при рим CASINE AVOUH* PULLER SATE WINDS NAME OF THE PRITHESS STATE IS CONSERVATION ABOUT ON OFFICE OPERATOR GE WERT FLUGS SAGKS HOW PLACED Pell completion report was made by VanderGrahm Exploration of Pallas Jenas CERTIFICATE!!, the undersigned glate. That I am amployed by
to make the coporty and that this report was propored under my supervision and direction and that all
facts stated lagsals are true, specified to the base of my knowledge.

Signature:

Title:

Dute well to againped to produce, but due to so available market, he pipe line connection, ato, the well has been shut-in.

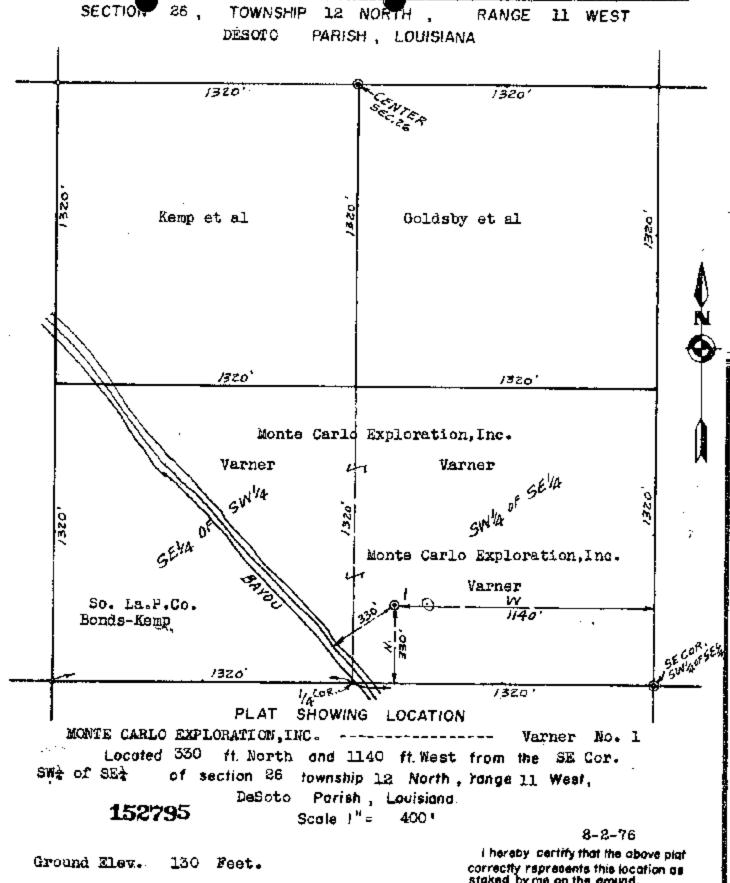
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	S USE ONLY	RORM M.S-13-R R 2-1976) AMENI	DED PERMIT TO DRILL FOR MINERALS	STATE OF LOUISIANA DEPARTMENT OF CONSERVATION
	XX Change	152795 Serial No.	12-9-76	, Ameridad Permit
:	7612 Effective yymm	OURRENT CODES	DeSoto Red River Bull Bayou Vander/Graham Exploration, I 4925 Greenville Ave	FORMER CODES
	AMENDMENT ACTION		TE Dallas, Texas 75206	<u> </u>
:	PARISH (قانەيغىن ئادادە (كانەيدىن	034218 WELL NAME	Varner	1
	μα315ι ΧαΣ OPERATOR		† 12N R 11W Former Well No.	No
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:	ஒர்த் த NA-FRE		*Formerly: Monte Carlo Expl	oration, Inc.
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erial No. Se rarish DE	SOTO	125 tã2	<u> </u>	 1705	120594 Field_	RED F	IVER	BULL BAYOU	
>perator_MC	NTE (CARLO E	XPLORA	TION	INC.				
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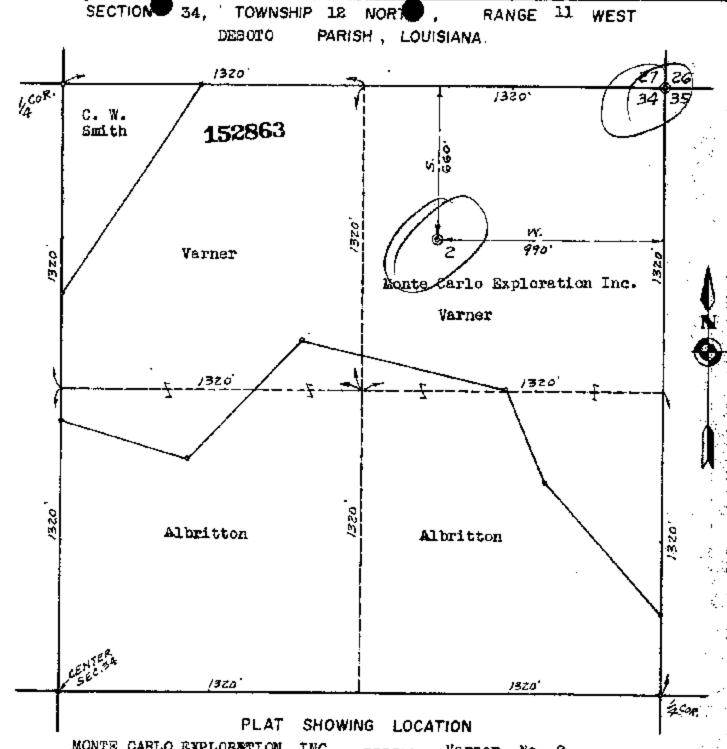


staked by me on the ground.

USE ONLY	FORM VID-15-R (R 2-1976)	AMENDE	PERMIT 1	O DRILL FO	OR MINER	ALS	STATETOF (ÎD) DEPARTMENT	DISTANA OF CONSERVATION
XXXXX _{Change}	1,52795	- Serial No.	S	Date	July .	18, 198	4] Amended sermi	t
8405 Effective	CURRENT CODES 016 7651	_ PARISH . _ FIELD .		lver-Bul				FORMER CODES
AMENDMENT ACTION	6040	_ UPERATOR . ADDRESS . CITY & STATE .	F. O.	Golf Pe Box 535 er City,	5 -	il corp.	_	6157
인간의 데 PARISH - 연간선 데 FIELD - AMPE 데 OPERATOR - 인간된 데 LSE UN	034218 LOCATION OF WE *Vander/Graha	_ WELL NAME LL: Sec 26 T m Explorati	Verner 12W _R 1 on, Inc	1W =orm	er Well No.		Ng1	
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<u></u>									
; Operator	MONTE CA				<u>inc.</u>				
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, City & State.	BOSSIER	CITY,	LA. 7	1010			_		
, ∕Vall Nome	VAHNEH	_NO.	2						
: Hac a tion——	SEC 34.		RIIW						
·	<u>660° SOT</u>	ITH AND) 99LJ	West	of ne	COR OF	SEC.	34.	
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						P1	D. 2	2950*	
: Zone or Rese	rvoir of Propose	d Completio	n			PALU			
	epartment of Co	-				29B,	29E		
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MONTE CARLO EXPLORATION, INC. -----Varner No. 2 Located 660 ft. South and 990 ft. West from the NE corner of section 34 township 12 North , range 11 West, DeSoto Parish , Louisiana.

Scale 1" = 4001

8-10-76

Ground Elev. 133 Feet.

I hereby certify that the above platcorrectly represents this location as staked by me on the ground.

DEHT OF CONSERVATION	FO -im MD-13-R R 2-1976)	AMENDED PE	RMIT TO DRILL FO			TOF CONSERVA	
g USFONLY (152863	Serial No.	Da 12	<u>-10-76</u>	-	FORMER C	ODES
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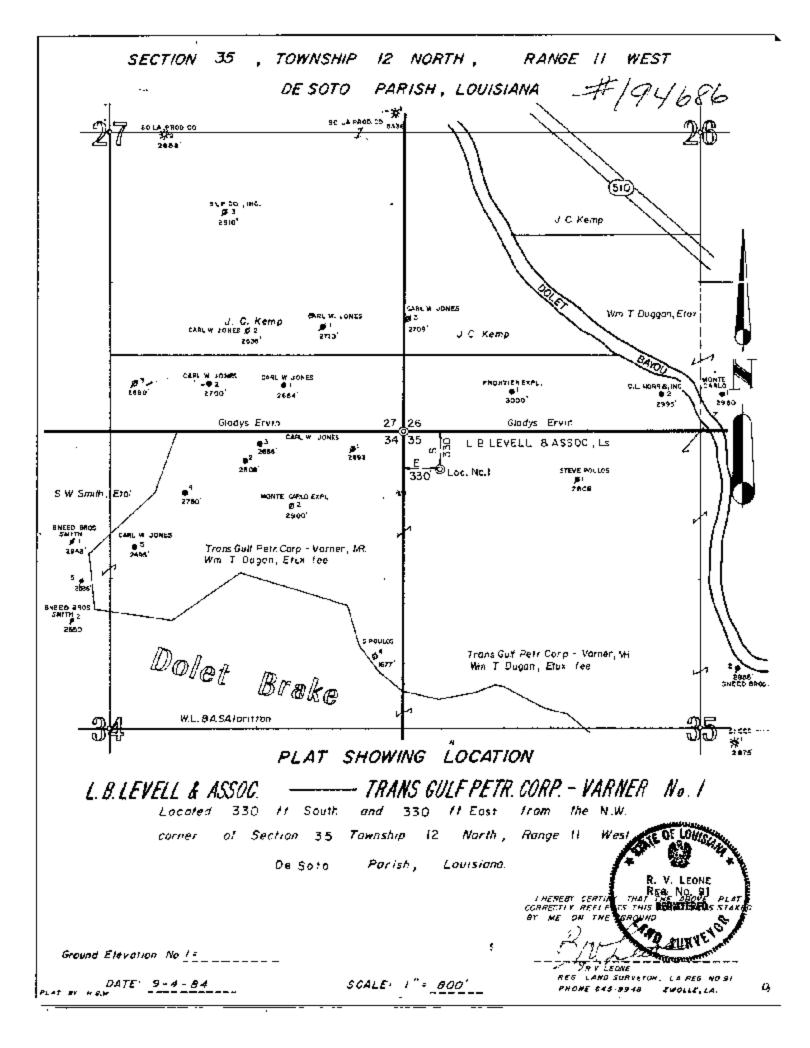
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DEPT. OF CONSERVATION USE ONLY	PORM MC-15-R (R 2-1976)	AMENDED (ERMIT	TO DRILL FO	OR MINERAL	.s	STATE OF LO	OUISIANA IT OF CONSERVA	LTION
XXXXXX Change	152863	Serial No.	S	Date	July 1	8, 1984	Amended Ferr	nit	\$75,00
8406 _{Effective}	CUBRENT CODES	PARISH	DeSo					FORMER C	ODES
yymm :	7651 6040	FIELD OPERATOR ADDRESS CITY & STATE	Tran P. C				*	615	7
AMENDMENT ACTION ம்ம்.9 பி FARISH ம்.3 பி E FIELO நிக்கிய OPERATOR நிக்கிய OPERATOR	034218 Location of WE Wonder/Grah	WELL NAME	Varn 12W _R 1	1 nor	er Well No	~	No	2	
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	Ŋ	FLL FILE CO	Рγ				No.	86273	Α
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WELL FILE COPY

FORM MD 13.R \$200 STATE OF LOUISIANA PERMIT TO DRILL FOR MINERALS DEPT. OF CONSERVATION Multiple Zone Processing ATT Send To___Shreveport/10 — Date **Saptomber 6, 198**4 Serial No. Ser#194686 _APT#1703122414 Parish. DeSoto 016. Field Red River Bull Bayou 7651 Operator L. B. Levell & Assoc. 9999 Address Rt. 5, Box 270 A City & Stote Natchitoches LA 71457 Well Name Trans Gulf Petr Corp -Varner NO. 1 Location Sec 35, 712N, R11W 330'S & 330'E fr NW/C of Sec. 35. PTD 2990* Zone or Refervoir of Proposed Completion_ Paluxy Applicable Department of Conservation Order 298, 109 Series

DEPT. OF CONSERVATION WE ONLY	FORM MD-15-3 (R 2-1976)	AMENDED PERMIT TO DRILL FOR MINERALS					DDIS-ANA NT OF CONSERVATION mit\$75.00
CODAY COXXXX	194686	. Seria No.	S	Date November	· 27. 1984	Amended Fe	mit
8 <u>810</u> Effective	CURRENT CODES 016	PARISH	DeSoto				FORMER CODES
3741112	<u>7</u> 651 6040	FIELD OPERATOR		er-Bull Bayon ulf Petroleu		,	9999
		AUDHESS	P.O. Box				
AMENDMENT ACTION		CITY & STATE	Bosster	City, LA	71111		
QQQ9. ① PAH SH QQQQ FIELD XXXXXX OPERATOR QQQQ LSE.UN	Location of WE	LL. Sec _35	Varner**		No. 1	No. 3	
1011€ 15 JN-LSE	**Trans-Gul			r			
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	<u> </u>						.
1011161☑ JN-UN	Applicable Departme	git of Conservat	ith Order			P 12-1	· · ·
プログログロ WELL NO. . เว็บ2)1.i同 LOCATION	Pelited	Commissioner	<u> </u>		ومجر	Issumphutho	115
. '	v	ELL FILE (No.	88021 A

STATE OF LOUISIANA OFFICE OF CONSERVATION AMENDED PERMIT TO DRILL FOR MINERALS

...\$105.00

LAFAYETTE DISTRICT

196686 SERIAL NO.

DATE 06/01/2000

EFFECTIVE 07/01/2000

CURRENT CODE

26 PARISH 9644 FIELD

JEFFERSON

WEST LAKE PONTCHARTRAIN BLK 38

R142 OPERATOR REDMAN OPERATING COMPANY 10375 RICHMOND AVENUE,

10 PRODUCT **SUITE 1215**

HOUSTON., TX 77042-4151

1-041654

WELL NAME SL 11293

LOCATION OF WELL SEC 000 T 000 R 000 M

FORMER OPERATOR: W137 WAGNER OIL COMPANY

L432001313

NO. 002

APPLICABLE OFFICE OF CONSERVATION ORDERS:

29B

PHILIP N. ASPRODITES

TODD KEATING

COMMISSIONER OF CONSERVATION

ISSUING AUTHORITY

WELL FILE

PRIORITY SCORE

Data Entry

WELL SERIAL	INSPECT DATE	SITE TYPE CODE	PRIORITY	SCORE	MULTI COMPL	COMMENTS	
152795	1-24-01	07	 □ (1) Urgent □ (2) High ⋈ (3) Moderate □ (4) Low 	11		Residence	

OR IN - NA - Not Accessible	
-----------------------------	--

NL - Not Located □

SITE TYPE CODES -

- 01 Facility
- 02 Plug and Abandon Well
- 03 Pit and Facility
- 05 Pit and Well
- 06 Pit, Well and Facility
- 07 Well and Facility
- 10 Pit, Facility, Trash and Debris
- 11 Pit, Trash and Debris
- 12 Pit
- 13 Trash and Debris

Entered by	y: 777 4	
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Date:	2-16-01	
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Well SN 152795

	Well SN <u>13 2 793</u>					
No.	Factors	Score	Well Sc			
1a	Leaking well - natural gas - within 100 m of a public building or residence	32				
1b	Leaking well - natural gas	14				
1c	Leaking well - water or oil > 1 bbl/day	30				
1d	Leaking well - water or oil < 1 bbl/day	10				
2a	Hazard to navigation - well submerged or at surface	28				
2b	Hazard to navigation - well in navigable waterway (boat hazard)	20				
2c	Well in any other body of water	12				
3	H2S possible or present	2				
4a	Well not leaking but under pressure	8				
4b	Well not leaking, pressure status unknown	6				
5	Well not leaking, pressure > 500 psi	2				
6	No wellhead or wellhead damaged	4	4			
7	No production casing/open hole	2				
8a	Production site/pit contaminated substantially	3				
8b	Production site/pit contaminated minimally	1				
9a	Within 100 m of public water supply (aquifer, well, or surface water)	8				
9b	Within 100 m of public building/facility used	7	٠			
	by public on a recurring basis, or a residence		7			
9c	Within 100 m of surface water or wetland	7				
9d	Within 100 m of habitat containing rare, threatened,	4				
	or endangered species (plants and animals)					
9 e	Within 400 m of residential or urban development	3				
9f	Within 400 m of surface water or wetland	2				
9g	On land actively managed for crops or forage (pasture)	11				

Score: //
Priority: 3

Priority Table Priority Score Priority 1 - Urgent > 30 Priority 2 - High > 19 Priority 3 - Moderate > 10 Priority 4 - Low 10 & under

Instructions:

- 1. Assign the appropriate factors to a site.
- 2. For factors with more than one option in a category,e.g. 4a & 4b,assign only one option.
- 3. Total all the assigned factor scores for the site.
- 4. Use the total score and the priority table to set the site priority.

By: Date: 2-15-0/

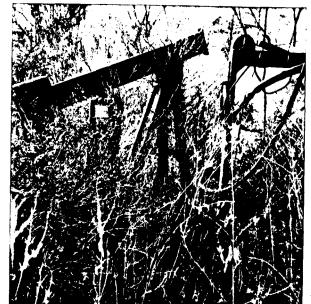
Note: m = meters

SRCN2300 - Maintain Orphan Inspection © 02/14/2001 04:23 PM
Action Edit Query Block Record Field Help
Station (being Natural Resource Information System Orphan Inspections Well Serial 152795 Well Name Variable Variable
Night
Field ID 7531 RED RMSM-BULL 9& YOU 1 ONSHORE SHREVEPORT 6 Section 776 Township 100 Range 1400 Meridian W Parish 16 105 5010
Section 126 Township 12N Range 11VV Meridian W Parish 16 DESOTO Lambert Y 483,237 Lambert X 1700,874 Zone N Upper Perf 2,511 Lower Perf 2,594
Organization ID 6040 TRANS-OULF PETROLEUM CORP
I Status 123 ACT 404 ORDHAN WAlcomowing Uniqued I IIII Furrent 122 ACT 404 ORDHAN WAlcomowing I
Inspection Site Type Priority Score Bid Mailed Site
Date Dete Dete Dete Not Accessible Multiple Completions NORM NORM
Survey Date Comments
Wells Associated via Wellbore
Well Serial Num Well Name Well Num Well Status Status Date ▲ 152795 VARNER 001 23 ACT 404 ORPHAN WELL-ENG 09/20/1999
Associated Production Pits
Pit ID Pit Status 169307 26 FIELD CLOSURE
Associated Reserve Pits Occurences
Michi Savial Num. Occur Sav Num. Occursance Data Status
Well Serial Num Occur Seq Num Occurrence Date Status
Number weed to uniquely identify wells. Het ef unique eveileble
Number used to uniquely identify wells list of values available Record: 1/1

ORPHANED OILFIELD SITE INSPECTION FORM DNR/Office of Conservation Engineering Division

Serial Numbe		perator Code 6040		
15279	75 01-24-2001 TR	LANS-GULF PETROLEUM CORP.		
Vell Name an	as welles!	andowner (If Known)		
		andowner Address		
Parish DE	S070 DistrictSHREVEPORT	·		
Field	1	RECEIVED		
		FEB 0 5 2001		
WELL BIT	E (Include separate report and photo for each well)	OFFICE OF COMPRISONATION		
1	Type of Location Water Marsh Land	SHREVEPORT, LA		
	Well-c	drained all year et to access during thinkfor months		
2.	Accessibility to Well-site Existing Road Limited Access			
	Explain:			
3.	Is the well in a waterway?	Yes		
4.	Wellhead Condition (Attach Ph	noto) <pre>P teaking Damaged No Well Head</pre>		
	describe damage to wellhead.	fluid or gas and volume. If damaged		
•				
		/		
5.		zermine.		
6.	Pumping Unit PresentYe			
7,	Well-site Contamination others	pecity appears None		
	pertinent comments.	ted area, severity, and any othe		
8.	Pit at Well-site (Attach Phot	to)YesNo		
	•	Content		
9.	Identify the number and ki churches, school, parks) with Thurse 200	nd of inhabited structures (house nin 300 feet of the well. O' North Fast of Site		

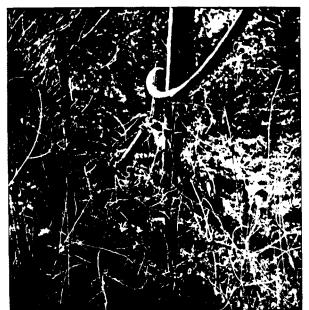
• •	•	is there	residential	or urban	developmer	nt (hospit	feet of the al, subdivi f so, desc	ision.
		0 f 5) f	siheB he	0054 270	rax. 6	50 500r	h west	
•								
1	L O.	How close is the site to the nearest federal, state or parish road and identify. Site Located approx. 600' South West of State Itay #510.						
1	1.	Use of p (residenti	roperty on	which th nd, forest	ne well/f , pasture,	acility/pi etc.)	ts are lo	ocated
1	12.	Distance swamp/mars	to neares sh), and id hocated	entify by	name, if 1	am, lake known. <i>Dolet</i>	, pond, i	river,
		site Lo	1150 .	PPROX.	16' FROM	n old	W-teke W	
PRODUCT	ION	FACILITY	(Attach Photo, Com	plete this section	n for only one we	all utilizing thi	s facility and a ther wells util	nch photos
			•					
1.	•	Storage To	anks (Stock	c, saltwate	r, gun bar	condition of	Welded or	
, 유	رر رير	 	(bbts)		Stock (bbls)	Tank	Bolted	FEB
THE C	Ш	01001			NOW in	PooR	Welded Welded	
다 CO	П	Stock	210	 	rowr in each tan	POOR	Wender	-
FEB 0 7 2001 OFFICE OF CONSERVATION	< m			2 100 6613	in each tan	^ <i>)</i>		
2 .		Productio	n Equipment		er by each type. ansfer Pumps) Compres	sorsD	ehydrators
3	•		oduction Fa				No No	
4	•		n Facility	Site Conta		_	s Nove)	
REMARK	B (0	 Give any o	ther pertin	nent inform	nation on	this site.		Misc. Pipe
	ust	remove ;	dispose of	this via	ener	THE HOOKE	x up to	
					<i>F</i>			-
			See PX	al allac	hed Fu	K KOZO	111/10 31	76, 1
Spe	cisl	Note:					59 29.	
		Λ	cktks is		uction	W 93° 2	vithin 200	5
	_	Λ .	. Should be	(1	obedone	(35)	within 200	*
_ · tm		y rom Le	- Pres		SS			
A.	1.	Sept 1	2FA-111		25/01		01-24-	



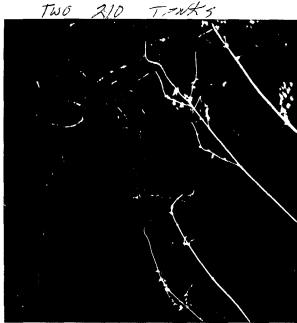
TRANS- GULF POTROLOUMC (6040) TARNER NO. 001 SN- 152795 Sec. 26, TI2N- 1811N 01-24-01 RIR-1313 (7651) 01-24-01 Desoto (016) LA



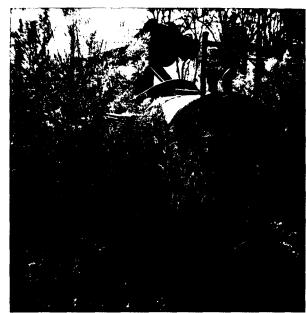
TRENS-GULF FEFROLEUM C /6040 VERNER NO COI SN-152795 Sec. 26, TIAN-RIIW RUN RR-B3 7657 MAIR OI-24-01 Desoto (016) MAIR



TRONS - GULF POTROLOUM (6040) VORNER NO.001 SN-152795 SEC. 26, TIZN-RIW 44/2"CSG RR-BB (7657) Desoto (016) Will 11-24-01



TRANS-GULF POTROLEUMC | 60 40, PARNER NO. 001 5N 152795 EC. 26, TIZN-RILL PR-33 (7651) 2-210 TANKS Desoto (016) GROWN PAYOR



TRONS-GUNT POTROLOUMC YERVER NO. 00/5N-152795 Sec. 26 TIZIV RIIN RR-BB (7651) Cog SWEB Riger. Desoto (016) hourtion. of PR

PRIORITY SCORE

Data Entry

WELL SERIAL	INSPECT DATE	SITE TYPE CODE	PRIORITY	SCORE	MULTI COMPL	COMMENTS	
152863	1-25-01	05	 □ (1) Urgent □ (2) High □ (3) Moderate ⋈ (4) Low 	5		Nowellhead	

OR	IN	-	NA	-	Not Accessible	
			NI.	_	Not Located	Π

SITE TYPE CODES -

- 01 Facility
- 02 Plug and Abandon Well
- 03 Pit and Facility
- 05 Pit and Well
- 06 Pit, Well and Facility
- 07 Well and Facility
- 10 Pit, Facility, Trash and Debris
- 11 Pit, Trash and Debris
- 12 Pit
- 13 Trash and Debris

Entered by	:hitz	
		_

Date: 2-16-0/

Well SN 152863

		<u> 2863</u>	
No.	Factors	Score	Well Sc
<u>1a</u>	Leaking well - natural gas - within 100 m of a public building or residence	32	
1b	Leaking well - natural gas	14	
1c	Leaking well - water or oil > 1 bbl/day	30	
1d	Leaking well - water or oil < 1 bbl/day	10	
2a	Hazard to navigation - well submerged or at surface	28	
2b	Hazard to navigation - well in navigable waterway (boat hazard)	20	
2c	Well in any other body of water	12	
3	H2S possible or present	2	
4a	Well not leaking but under pressure	8	
4b	Well not leaking, pressure status unknown	6	
5	Well not leaking, pressure > 500 psi	2	
6	No wellhead or wellhead damaged	4	4
7	No production casing/open hole	2	
8a	Production site/pit contaminated substantially	3	
8b	Production site/pit contaminated minimally	1	
9a	Within 100 m of public water supply (aquifer, well, or surface water)	8	
9b	Within 100 m of public building/facility used	7	
	by public on a recurring basis, or a residence		
9c	Within 100 m of surface water or wetland	7	
9d	Within 100 m of habitat containing rare, threatened,	4	
···	or endangered species (plants and animals)		
9e	Within 400 m of residential or urban development	3	
9f	Within 400 m of surface water or wetland	2	
9g	On land actively managed for crops or forage (pasture)	1	1

Score:	5	
Driority	4	

Priority Table Priority Score Priority 1 - Urgent > 30 Priority 2 - High >19 Priority 3 - Moderate >10 Priority 4 - Low 10 & under

Instructions:

- 1. Assign the appropriate factors to a site.
- 2. For factors with more than one option in a category, e.g. 4a & 4b, assign only one option.
- 3. Total all the assigned factor scores for the site.
- 4. Use the total score and the priority table to set the site priority.

By: Date: 2-15-0 /

Note: m = meters

SRCN2300 - Maintain Orphan Inspection 03/06/2001 10:45 AM
Action Edit Query Block Record Field Help
DI TOS CONDEX :
Well Serial 152863 Well Name VARNER Orphan Inspections Well Num 1002
Num 1555
Section 034 Township 12N Range 11VV Meridian W Parish 16 053010 Lambert Y 482,215 Lambert X 588,882 Zone N Upper Perf 2,508 Lower Perf 2,558
Organization ID 6040 TRANS-GULF PETROLEUM CORP
Status 23 ACT 404 ORPHA 109/20/1999 Plugged by Status 23 ACT 404 ORPHA 109/20/1999 Status
Date Date Date Not Located Not Accessible Multiple Completions NORM Contamination NORM Survey Date
Comments NO WELLHEAD
No. 11. 10. 10. 10. 10. 10. 10. 10. 10. 10
Wells Associated via Wellbore
Well Serial Num Well Name Well Num Well Status Status Date
△ 152863 VARNER 002 23 ACT 404 ORPHAN WELL-ENG 09/20/1999
Associated Production Pits
Vegendrad Linddorling Life
Pit ID Pit Status
↑ 16P418 99 OPEN-ORPHAN-DISCOVERY 16P419 99 OPEN-ORPHAN-DISCOVERY
Associated Reserve Pits Occurences
Well Serial Num Occur Seq Num Occurrence Date Status
Number used to uniquely identify wells list of values available Record: 1/1
Recold. 171

PRODUCTION PIT INSPECTION REPORT **DNR/Office of Conservation** Operator Serial Number TRANS COLF To FROLEVIN CORP (6040) 152863 01-25-2001 Lease Name TEXMER NO. 002 Location Sec 034: T 1211: R 1111/: Phone Parish Desoto (016)) Contact RiVer-Bush Beryod (765) A. INSPECTION REASON ☐ Periodic ☐ Reinspection ☐ Complaint # __ PI ORPhaned B. PIT CLASSIFICATION تشيع ☐ Produced Water ☐ Well Test ☐ Washout □ Compressor Station ☐ Emergency ☐ Natural Gas Processing Plant Other: Old Reserve Fittorichishing N. C. SITE MAKEUP ☑ Upland □ Wetland Well-drained Elevated ☐ Incline > 5% □ Submerged D. STATUS ☐ Active ☐ Inactive □ New Construction □ Closed E. DIMENSIONS 30 - dia Meter Length ___ft. x Width ___ft. Average Depth $\frac{\dot{\psi} i}{}$ ft. owner request F. MANUFACTURED LINER ☐ YES II NO G. OPERATIONAL STANDARDS 1. INTEGRITY OF PIT LEVEES ☐ OK ☐ Deficiency (see remarks) 2. DISCHARGE OF N.O.W.* FEB 45 2001 SPREIRS 1 None Authorized (permit no. ____ ☐ Deficiency (see remarks) OFFICE OF CONSERVATION SHOPARDORT 18 ☐ present ☐ past ☐ both □ overflow □ siphon/pumped ☐ breech in levee ☐ bleeder ☐ seepage (__lateral or __subsurface) 3. FREEBOARD 24" inches 4. FIRE HAZARD Pit ID# Inactive Status Notification None □ Deficiency (see remarks) N/A Deficiency Verify Form UIC-15 H. QUINTAB READING(S) - (Discharge Only) Compliant Special Operational Provisions Sample 1 _____ Sample 3 __ Deficiency __N/A ___OK Sample 2 ___ Sample 4_ _Deficiency Exemptions: Photos Attached Review Date / / by See Attached Narrative Report

* Nonhazardous Oilfield Waste (N.O.W.)

THE OPERATOR'S REPRESENTATIVE SHALL SIGN THIS REPORT TO ACKNOWLEDGE RECEIPT OF HIS COPY, YOUR SIGNATURE CANNOT BE CONSTRUED AS AN ADMISSION OF GUILT FOR ANY VIOLATIONS CONTAINED IN THIS REPORT.

No	Witness			
Operator's	s Representative			
	1. Buff. CHA-III	,	1	

Conservation Enforcement Agent

IN COMPLIANCE

Disposition ____ OK ____ N/C ___

yes		no
-----	--	----

PRODUCTION PIT INSPECTION REPORT

Conservation Enforcement Agent

DNR/Office of Conservation

Serial Number 152563	Date 6/- 25-200/	TRANS-GOLF PetroLeun Carp (6040)
Lease Name VERNER NO	6.002	Address
Location Sec <u>034</u> : T <u>121/</u> : R <u>//</u>	<u> </u>	
Parish Desoto (016)		Phone () —
Field Red River BULL Bery	60 (765/)	Contact
A. INSPECTION REASON		DIAGRAM
☐ Periodic ☐ Reinspection ☐	Complaint #	P-002 N
	ssor Station Gas Processing Plant	w sister with
Other: Usd working P	ST fOR King	24.5
	, Elevated Submerged	REMARKS "ORPHONED"
D. STATUS ☐ Active ☐ Inactive ☐ New Construction ☐ Closed		2000 (10" freebornd) (3) poeres fresh wither)
E. <u>DIMENSIONS</u> , Length <u>%</u> ft. x Width <u>2</u> ft. Average Depth <u>#</u> ft.	i.	Special Note:
F. MANUFACTURED LINER ☐ YES ☐ NO		Current Landowner requests that "Pasive Closure" be allowed for this pit. He uses this pit to
G. OPERATIONAL STANDARDS 1. INTEGRITY OF PIT LEVEES		water his cows.
☐ OK ☐ Deficiency (see 2. DISCHARGE OF N.O.W.*	e remarks)	2/5/01
None Authorized	d (permit no)	RECEIVED
☐ Deficiency (see remarks		EED () F con)
□ present □ pa		FEB 0 5-2001
☐ overflow ☐ sip ☐ breech in levee	<u> </u>	OFFICE OF CONSERVATION CUREVEDORT LA
	eral orsubsurface)	
3. FREEBOARD // inc		
4. FIRE HAZARD ☑ None □ Deficiency (s	see remarks)	Pit ID # P Inactive Status Notification N/A Yes
H. QUINTAB READING(S) - (Discha Sample 1 Sam Sample 2 Sam	arge Only)	Verify Form UIG-15 Compliant Deficiency Special Operational Provisions N/A OK Exemptions: Deficiency Deficiency
Photos Attached		Review Date/ by
See Attached Narrative Report * Nonhazardous Oilfield Was	ste (N.O.W.)	Disposition OK N/C P/V
THE OPERATOR'S REPRESENTATIVE	E SHALL SIGN THIS F	REPORT TO ACKNOWLEDGE RECEIPT OF HIS COPY, YOUR OF GUILT FOR ANY VIOLATIONS CONTAINED IN THIS REPO
Operator's Representative		IN COMPLIANCE yes no

UIC-15 PREPARED BY BATON ROUGE OFFICE

STATUS	DATE	REVIEW BY
99	315 61	sh
	11	
-		

ORPHAN PIT

PRESCRIBED NOTIFICATION

OPERATOR: TrAns-GWF Petroleum Corp. 40401
FIELD: RED RIVER-BULL BAYON 176511
SEC. 34, TWP. 12N, RGE. 11W PARISH DESOTO [14]
WELL NAME & NUMBER OF THE NEAREST WELL TO PIT:
VARMUR # 2 SERIAL NO. [152863]
dimensions: length 90 ft., width 24 ft., ave depth 4 ft.
TYPE OF PIT: Old WORKing pit for pig.
COMMENTS:

ORPHANED OILFIELD SITE INSPECTION FORM DNR/Office of Conservation Engineering Division

Scriat Number	Date 01-25-2001	Operator Code 6040 TRANS-GULF PETROLEUM CORP.
Vell Name and	16m	Landowner (If Known)
_	94 Tup/QN Rge/11W	Landowner Address
Parish DE	SoTO DistrictSHREVEPORT	·
RED RIVE	ER-BULL BAYOU '7651'	Landowner Phone RECEIVED
VELL SITE	(Include separate report and photo for each w	OFFICE OF CONICEDIVATION
1.	Type of Location Water Marsh	
2.	Accessibility to Well-site Existing Road Limited Access	,
	Explain: Access To	site ackoss Posture.
3.	Is the well in a waterway? Is it submerged? Distance below water:	Yes No No
4.	Wellhead Condition (Attach	Photo) No Well Head
		f fluid or gas and volume. If damaged,
5.	Is there pressure on wellhe State pressure if able to d	
6.	Pumping Unit Present	YesNo
7.	Well-site Contamination :	erspecify (appears None)
		nated area, severity, and emy othe.
	mana Superson and Alak St. Sections, 1999 Styles at the section broken S. Section 1997 of Section and Alak Styles and Section 1997 of Section	
		150e Revent
1.7 doct	Pit at Well-site (Attach Ph 36' dimmeror X 4'door Length 90' Width 24' Depth 4'	noto) ves No See Reverse ter Special Note Content (appenes trest with)
- 9.	Identify the number and	kind of inhabited structures (house, ithin 300 feet of the well. None

, .		Aside from those structures/facilities within 300 feet of the site, is there residential or urban development (hospital, subdivision, business, etc.) within 1/4 mile of site? If so, describe.
	10.	How close is the site to the nearest federal, state or parish road and identify. State Hay 1 510.
	11.	Use of property on which the well/facility/pits are located (residential, farmland, forest, pasture, etc.). Pasture & Fore /
	12.	Distance to nearest waterbody (stream, lake, pond, river, swamp/marsh), and identify by name, if known. 5, to Located appears of Docket Bryon.
	13.	Identify distance to nearest water well, if known. 5/th Located approx. 3/4 mike South West of with well.
PRODI		N FACILITY (Attach Photo. Complete this section for only one well utilizing this facility and attach photos of facility. Reference this report on FORM Orph-1 submitted for other wells utilizing this facility.)
	1.	Storage Tanks (Stock, saltwater, gun barrel, etc.) Type Capacity Contents Quantity of Condition of Welded or
OFFICE OF CONSERVATION ENGINEERING DIVISION	FEB 0 7 2001	FEB 0 5 200 SERVATION PER 0 5 200 SERVATION
	2.	Production Equipment (Indicate number by each type.)Separators Heaters Transfer Pumps Compressors Dehydrators
	3.	Pit at Production Facility (Attach Photo)
REMA	4. RKS	Production Facility Site ContaminationOilSaltwaterDebrisConcrete SlabsMisc. Pipe Give any other pertinent information on this site.)
	201.0	Note:
<u> </u>	rent water	Landowner uses these Zpits N 31" 59 19.8" This cows and has asked that w 93" 25" 43.5 Closure be allowed. 35
<u>(A</u> Con	× //. serva	CFA-TT OTTO Date TODY Processor (ORP-1)

0/- 25-200/ Date Pro-Ornhan (ORP-1)



TRANS-GULF PATROLEUM CARA (6040) VARNER NO. 002 51-152863 Desuro (016),01 500.34-TIEN-RIIN 44099 Red River-BULL BEYOU 765-, 01 PM



TRANS-GULF PATRICHOUM COND (60 to VERNER NO. 002 DESOTO (016)
5N-152863
SEC 34 TIZN-RIW
KON RIVER-13UND BEYOU 765/ 01/11

PRIORITY SCORE

Data Entry

WELL SERIAL	INSPECT DATE	SITE TYPE CODE	PRIORITY	SCORE	MULTI COMPL	COMMENTS	
194686	1-25-01	02	 □ (1) Urgent □ (2) High □ (3) Moderate ⋈ (4) Low 	5		No we Ilhead	

OR	IN	-	NA	-	Not Accessible	
			NL	-	Not Located	

SITE TYPE CODES -

- 01 Facility
- 02 Plug and Abandon Well
- 03 Pit and Facility
- 05 Pit and Well
- 06 Pit, Well and Facility
- 07 Well and Facility
- 10 Pit, Facility, Trash and Debris
- 11 Pit, Trash and Debris
- 12 Pit
- 13 Trash and Debris

Entered by:_	m/L
--------------	-----

Date: 2-19-0/	
---------------	--

Well SN 194686

No.	Factors Well SN _///	Score	Well Sc
1a	Leaking well - natural gas - within 100 m of a public building or residence	32	Well Go
1b	Leaking well - natural gas	14	
1c	Leaking well - water or oil > 1 bbl/day	30	
1d	Leaking well - water or oil < 1 bbl/day	10	
2a	Hazard to navigation - well submerged or at surface	28	
2b	Hazard to navigation - well in navigable waterway (boat hazard)	20	
2c	Well in any other body of water	12	
3	H2S possible or present	2	
4a	Well not leaking but under pressure	8	
4b	Well not leaking, pressure status unknown	6	
5	Well not leaking, pressure > 500 psi	2	
6	No wellhead or wellhead damaged	4	4
7	No production casing/open hole	2	/
8a	Production site/pit contaminated substantially	3	
8b	Production site/pit contaminated minimally	1	
9 a	Within 100 m of public water supply (aquifer, well, or surface water)	8	
9b	Within 100 m of public building/facility used	7	
	by public on a recurring basis, or a residence		
9c	Within 100 m of surface water or wetland	7	
9d	Within 100 m of habitat containing rare, threatened,	4	
	or endangered species (plants and animals)		
9e	Within 400 m of residential or urban development	3	
9f	Within 400 m of surface water or wetland	2	
9g	On land actively managed for crops or forage (pasture)	11	/

Score:	5	
Drioritus	4	

Instructions:

- 1. Assign the appropriate factors to a site.
- 2. For factors with more than one option in a category,e.g. 4a & 4b,assign only one option.
- 3. Total all the assigned factor scores for the site.
- 4. Use the total score and the priority table to set the site priority.

Priority Table						
Priority Score						
Priority 1 - Urgent	> 30					
Priority 2 - High	>19					
Priority 3 - Moderate	>10					
Priority 4 - Low	10 & under					

Note: m = meters

By: Date: 2-18-01

ORPHANED OILFIELD SITE INSPECTION FORM DNR/Office of Conservation Engineering Division

Secretar Design Content Corp. 1946 86			
Leading set 3. In Is the well in a waterway? Jist the well in a water water: 4. Wellhead Condition (Attach Photo) Leaking, indicate type of fluid or gas and volume. If damaged describe damage to wellhead. 5. Is there pressure on wellhead. 5. Is there pressure on wellhead. 5. Is there pressure of contaminated area, severity, and ingorthead pertinent comments. 6. Pumping Unit Present 7. Well-site (Attach Photo) Landwarer (If Krown) Landwarer Maffees RECEIVED Landwarer Maffees RECEIVED Received Landwarer Maffees RECEIVED Landwarer Maffees RECEIVED	1946-06	01-25-200/	Operator Code 6040 TRANS-COUNT PETROLEUM CORP.
Landburger Address Landburger Address	Well Name and	Number 4	
Perich De SOTO DistrictSHREVEPORT FIELD SITE (Include separate report and photo for each well) 1. Type of Location Nater Type of Location Nater Lind Well-desired all year Lind Location well-desired all year Location well-des	VARNE	K J	
RECEIVED RED RIVER - Bull BAYOU 7651 Landbarer Phone RECEIVED RED 8 2001 NELL SITE (Include separate report and photo for each well) 1. Type of Location Land Well-drained all year Landbarer Landba	Location Sec	35 Tup /2N Rgc /1W	Landowner Address
REDRIVER - BULL BAYOUT 7651 FEB 5 ZUU! NELL SITE (Include separate report and photo for each well) 1. Type of Location Land Lan	Parish DE	Soto DistrictsHREVEPOR	
NELL SITE (Include separate report and photo for each well) 1. Type of Location Land Lan	Field RED PLUE	FR-BULL BANDU 7651)	Landowner Phone RECEIVED
1. Type of Location Nater	N CD KIVE	<u> </u>	FEB 0 5 2001
Well-dailed all year Too we to access during Nivility months Access during Summark meaths on Accessibility to Mell-site Access during Summark meaths on Access Explain: All Access Site Screeks Pasture Site Site Site Site Site Site Site Site	WELL SITE	(Include separate report and photo for each w	OFFICE OF CONSERVATION SHREVEPORT, LA
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EPA No.: 16-E-1003 FPN: E03612

APPENDIX 11

LOSCO INFORMATION

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

NOTE TO FILE

Components of this facility were not identified by the Louisiana Oil Spill Coordinators Office in either the Abandoned and Derelict Vessel Inventory or in the Statewide Abandoned Non-Hazardous Waste Pit and Facility Study, Phases 1-7.

EPA No.: 16-E-1003 FPN: E03612

APPENDIX 12 SAMPLING QA/QC WORK PLAN

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

SAMPLING QA/QC WORK PLAN

FIRST QUARTER 2003 SEVENTEEN NORTH LOUISIANA OPA SITE ASSESSMENTS FOR EPA REGION 6 Caddo, DeSoto, Red River, and Webster Parish, Louisiana

February 10, 2003

Prepared for: United States Army Corps of Engineers Tulsa District

USACE Contract: DACW56-02-G-1001 USACE Task No.: 0003 E & E Project No.: 001702.CU03

Prepared by: Ecology & Environment, Inc.

Approvals

Ecology & Environment, Inc.	United States Army Corps of Engineers		
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Project Manager	OPA Program Manager,	Tulsa District	
Jin Dolla: 2/11/03			
Jim Dellinger Date			
Project Director			

LIST OF ABBREVIATIONS AND ACRONYMS

ASTM	American Society for Testing and Materials	NRC	National Pagnanga Cantar
ASTM	American Society for Testing and Materials Aboveground Storage Tank	O&G	National Response Center Oil and Grease
bbl	Barrel	OSLTF	Oil Spill Liability Trust Fund
BS&W	Basic Sediment and Water	OPA	Oil Pollution Act of 1990
BTU	British Thermal Unit	%LEL	
			Percent Lower Explosive Limit
CERCLA	Comprehensive Environmental Response	$^{\circ}_{\circ}O_{2}$	Percent Oxygen
CO	Compensation and Liability Act	PPE	Personal Protection Equipment
CO	Carbon Monoxide	PPM	Parts Per Million
E&E	Ecology & Environment, Inc.	PRFA	Pollution Removal Funding Authorization
E&P	Exploration and Production	PRP	Potentially Responsible Party
FOSC	Federal On-Scene Coordinator	PVC	Poly-vinyl Chloride
FOSC-R	Federal On-Scene Coordinator	QA/QC	
	Representative	RCRA	Resource Conservation Recovery Act
FPN	Federal Project Number	SOP	Standard Operating Procedures
GPS	Global Positioning System	START	Superfund Technical Assessment and
GTS	Ground Truth Survey		Response Team
GTSFDS	Ground-Truth Survey Field Data Sheet	SVOC	Semi-Volatile Organic Compounds
H_2S	Hydrogen Sulfide	TCLP	Toxicity Characteristic Leaching Procedures
IATA	International Air Transport Association	TRPH	Total Recoverable Petroleum Hydrocarbons
IMD	Injection and Mining Division	UIC	Underground Injection Control
JOP	Joint Operating Partnership	USACE	United States Army Corps of Engineers
LAC	Louisiana Administrative Code	USCG	United States Coast Guard
LOSCO	Louisiana Oil Spill Coordinator's Office	USDOT	United States Department of Transportation
LDNR	Louisiana Department of Natural	USEPA	United States Environmental Protection
	Resources		Agency
LUW	Lease Unit Well	VOC	Volatile Organic Compounds
μR	Micro roentgens	WAD	Work Authorization Directive
NORM	Naturally Occurring Radioactive Material	YSI	Yellow Springs Instrument
NOW	Non-hazardous Oilfield Waste	. ~ -	
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1.0 SITE BACKGROUND

The Interagency Oil Clean-up Program was established in 1994 as a Joint Operating Partnership (JOP) between the United States Coast Guard (USCG), the United States Environmental Protection Agency (USEPA), the Louisiana Oil Spill Coordinator's Office (LOSCO), and the Louisiana Department of Natural Resources (LDNR) to address the potential pollution point sources located at abandoned oil production facilities in Louisiana. As part of this agreement, each participating agency agreed to provide resources, as available to them, for the purpose of: identifying abandoned facilities; assessing the pollution threat; facilitating corrective actions by the potentially responsible party (PRP); conducting a clean-up of the facility when the PRP fails to adequately address pollution point sources; and facilitating the recovery of assessment and clean-up costs.

To facilitate the assessment and clean up of these facilities, a USEPA or USCG Federal On-Scene Coordinator (FOSC) can access money from the Oil Spill Liability Trust Fund (OSLTF) under a Federal Project Number (FPN). An FPN is opened as a set amount of money and may only be used to address a single profit source to facilitate cost recovery. For this reason, co-located facilities may be addressed under separate FPNs. The FOSC is responsible for the expenditure of funds under an FPN.

The FOSC can also transfer funds from the FPN to another federal or state agency, in this case the United States Army Corps of Engineers (USACE), under a Pollution Removal Funding Authorization (PRFA) to assist with these activities. A member of the federal or state agency can be designated as the FOSC Representative (FOSC-R) to manage activities conducted under the PRFA on behalf of the FOSC. Under the Superfund Technical Assessment and Response Team (START) contract, Ecology and Environment, Inc. (E & E), previously provided assistance to the USEPA in conducting facility assessments and clean-up documentation. For this current tasking, E & E is providing facility assessment support to the USACE, under their Tulsa District indefinite delivery contract with E & E, in support of their PRFA agreements with the USEPA.

Abandoned oil production facilities targeted for investigation and clean up have been historically identified through a number of sources and procedures. In the case of this tasking, the LDNR Site Restoration Division identified two-abandoned oil production facilities, with separate lease unit well (LUW) codes, as potentially substantial threat sites and requested that these facilities be addressed under the Interagency Oil Clean-Up Program. A list of these facilities is provided as Appendix A.

To facilitate implementation of this Sampling Quality Assurance/Quality Control (QA/QC) Work Plan, field operations will be conducted at both sites within the same mobilization. Visual representations of the facility locations are provided as Appendix B.

For the vast majority of sites targeted for Oil Pollution Act of 1990 (OPA) site assessment, the production equipment found at the site was determined, as part of the on-site baseline investigation, to be associated with a legal energy production well and may be recovered for use, or disposed of as Non-hazardous Oilfield Waste (NOW), as defined by LAC Title 43, Part XIX, 129.M, and analysis of NOW parameters will not be necessary. Vertical delineation of production pits and other oil-impacted areas and sampling and analysis for NOW parameters is necessary to determine if removal is warranted, as well as the extent and volume of material to be addressed. Oil-impacted areas will include secondary containment basins, pits, and areas surrounding the facility that have visually observed oil contamination. In addition, the water phase of pits and oil-impacted areas will be sampled and analyzed to determine the degree of

Sampling QA/QC Work Plan 1st Q03-17 N LA OPA Sites February 10, 2003

impact by the NOW present at the facility and what, if any, disposal/treatment action may be required. One facility, specifically FPN E03612, has aboveground storage tanks (AST)s that may have been used by its last operator to store "slop oil". Slop oil is material that did not originate from the facility wells, and thus cannot be considered NOW but could still be addressed under Oil Spill Liability Trust Fund (OSLTF). Additional analysis will be required for disposal characterization. Contaminants or materials anticipated or potentially encountered at these facilities includes the following:

Contaminant	Concentration Range

NOW unknown
Naturally Occurring Radioactive Material (NORM) unknown
Non-NOW oil based materials unknown

It should be noted that, under certain circumstances, hazardous substances might be suspected to be present at the abandoned oil production facilities. Addressing hazardous substances at these sites is beyond the scope of this Assessment and Sampling Quality Assurance/Quality Control (QA/QC) Work Plan. If these types of circumstances are observed at any of the sites, the USACE FOSC-R and Task Manager will be notified and, if warranted, the scope will be modified to include this element.

The physical and/or chemical threats to the population are from contact with on-site contaminants, fire, and potential off-site migration of waste in conjunction with surface water run-off from the facilities. Most of the facilities are located near rural residential areas.

The only constraint on sampling that has been identified is the collection of samples from production pits. This issue will be resolved by use of a floating sampling platform (modified 14-foot riveted boat).

2.0 OBJECTIVES

The specific objectives of the facility assessments at the two abandoned oil production facilities are as follows:

- To identify and locate tanks, drums, pipelines, production equipment, containment basins, oilimpacted areas, pits, wells, or other potential pollution point sources;
- To determine ownership and previous operators of the facilities for cost recovery;
- To document evidence of past releases and determine the potential and threat of release from the facilities to the surrounding environment;
- To estimate the volume of material in tanks, drums, pits, or other containers;
- To estimate the location and volumes of NOW-impacted areas; and
- To estimate the extent and location of NORM-impacted areas.

The specific objectives for the chemical analysis of the material at the seventeen abandoned oil production facilities are as follows:

- Preliminary screen potentially NOW and contaminated soils and sludges for an estimate of the percent concentration of oil, as needed;
- To determine the concentration of NOW in impacted areas;
- To distinguish produced water from precipitation.
- To determine the proper disposal method for the potential oil based but non-NOW the material contained in the ASTs at the E03261 facility for by conducting chemic al analysis for Oil and Grease (O&G), total halogens, Basic Sediment and Water (BS&W), British Thermal Unit (BTU), total metals and Resource Conservation Recovery Act Characteristics (RCRA), including corrosivity, reactivity, ignitability, and toxicity.

3.0 TECHNICAL APPROACH AND METHODOLOGY

The technical approach for the facility assessments follows procedures previously approved by the USEPA for conducting Ground Truth Survey (GTS) investigations. Highlights of this approach and methodology are described in the following paragraphs.

The facilities are most commonly located using coordinates, site location maps, and site sketches provided in the various agency reports. After arriving at the facility, locations are verified using a non-differentially corrected Global Positioning System (GPS) receiver.

Due to the possible presence of NORM, proximity monitoring for gamma radiation will be conducted. The NORM screening will be conducted using an instrument with a measurement range of at least 1 to 500 micro roentgens (μ R/hr) per hour as indicated in Louisiana Administrative Code (LAC) Title 33: Part XV. Chapter 14, Part06 (LAC33XV.1406). The screening process will involve monitoring instrument readings for 50 percent of the circumference of the tanks and half the linear distance of the flow lines. Readings will be taken from within a 2-inch distance of the tanks and flow lines with the instrument bagged to prevent contamination. All areas with radiation levels higher than 50 μ R/hr will be considered NORM as indicated in LAC33XV.1404, until further analysis is performed. Typical ranges observed at abandoned oil production facilities usually fluctuate between 3 to 12 μ R/hr.

Measurements of the exterior dimensions of all tanks, pits, oil-impacted areas, and secondary containment basins (regardless of oil-impaction) will be recorded. Tanks will be gauged by lowering either an oil/water interface meter or a metallic, weighted tape measure with water-indicator paste applied to its surface, into the top to measure the height of product within the tank. The product in the drums and miscellaneous containers will be measured by acoustical sounding. The dimensions of the facility equipment will be recorded. Volumes of the facility equipment will be calculated using the above measurements and will be reported as barrels (bbl) of material. Evaluations of the integrity of the facility equipment will be recorded. Facility equipment to be evaluated during the survey includes: tanks, associated piping, separation equipment, and drums. The evaluations will be based on the following observations: degree of rust; presence of pinholes and dents; and signs of deteriorating base support. The condition of the secondary containment basin will be noted.

All on-site distances will be measured. Underground flow lines will be traced using a gradiometer or equivalent method. It is anticipated that the integrity of older, corroded flow lines may inhibit or prevent this operation.

Air monitoring will be conducted at breathing zone level above the hatches/openings of the tanks prior to accessing, at the headspace during container opening, and at the breathing zone while sampling oil-impacted areas. The following parameters will be monitored: percent oxygen ($\%O_2$), percent lower explosive limit (%LEL), carbon monoxide (CO) in parts per million (ppm), hydrogen sulfide (H_2S) in ppm, and organic vapors in ppm. Level B personal protection equipment (PPE) will be utilized for air monitoring and tank and container gauging operations when containers require opening and are not passively vented to the atmosphere. Utilized PPE will be disposed of as directed by the USACE FOSC-R.

Samples will be collected and analyzed in accordance with the specific actions outlined in the remainder of this work plan.

Photographs will be taken of the facility and surrounding environment (panoramic view) in a digital format. General reconnaissance data is recorded in the field log books and site-specific information is recorded on a JOP Ground-Truth Survey Field Data Sheet (GTSFDS) form (Appendix C), which includes status of site security features, drainage routes from site, nearest drinking water intakes, navigation routes to site, Spill Prevention, Control, and Countermeasures (SPCC) equipment violations, description of surrounding environment, and current spills or leaks observed. If an ongoing spill is observed, E & E will first notify the USEPA or USACE FOSCR and then the National Response Center (NRC) and the State Police hotline.

4.0 SAMPLING DESIGN

The following remedial units will be sampled as indicated.

Remedial Units	<u>Data Use Objective</u>	<u>Matrix</u>	<u>Parameters</u>
Pits & Oil-Impacted Areas	NOW Concentrations	Soil/Sludge/ Sediment	LAC43.XIX.129.B.7 ¹ ,
Pits & Oil-Impacted Areas	Oil Concentrations	Soil/Sludge/ Sediment	LAC43.XIX.129.B.7 ¹ (O&G only)
Pits & Oil-Impacted Areas	NOW Concentrations	Water	LAC43.XIX.129.M.7 ¹
AST at E03612	Disposal Method	Oil/ Oily Soilds	RCRA DP ²

Notes:

- (1) Parameters are set according to LACXIX.129.B&M.7, Laboratory Procedures for Analysis of E&P Waste, LDNR, Office of Conservation IMD (Revised 1/89) (see Section 9.2).
- (2) RCRA and other Disposal Parameters: O&G (per LDNR methodology¹), pH (M9040B), ignitability (M1010/1020A), reactive sulfides (Ch.7.3.4.2), reactive cyanides (Ch.7.3.3.2), total halogens (9076), BTU (ASTM D240-02), BS&W (D1796-97e1), total metals (M6010/7471A)

Toxicity Characteristic Leaching Procedure (TCLP) – volatile organic compounds, semi-volatile organic compounds, metals, pesticide compounds, and herbicide compounds (M1311/8260B, 8270C, 6010B/7470A, 8081A, and 8151A, respectively).

4.1 Sampling Design

The basic assessment and sampling activities anticipated to be completed for the abandoned oil production facilities includes the following:

- Complete the facility assessment, including: identification of size and depth of each
 secondary containment basin and oil-impacted area; determine quantity and sizes of the
 facility equipment, and volume and layering present in each tank (if access to the tanks
 can be safely accomplished); documentation of facility by digital photography; and
 locating facility components using GPS.
- Trace/delineate off-site impacts to the nearest drainage pathway.
- Collect up to three cores along a single diagonal transect of each pit (maximum dimensions not to exceed 100 feet by 100 feet) to a maximum depth of 22 feet or refusal using polyvinyl chloride (PVC) pipe, Triloc monitoring well pipe, sludge judges, soil recovery probe, or other sampling device. Aliquots from all three cores will be composited to prepare one representative sludge or sediment sample and one representative "clean" clay sample from each pit (if the confining layer is not distinct).
- Core each oil-impacted area (individual area dimensions not to exceed 100 feet by 100 feet in size) at up to five locations to a depth of 2 feet using manual soil recovery probe with hammer attachment.. If visible NOW-impacted soil is observed at 2 feet, core one of the five locations to a total maximum depth of 9 feet using PVC pipe, manual soil recovery probe with hammer attachment and extensions, or equivalent. Aliquots from all five cores will be composited to prepare one representative sludge or sediment sample and one representative "clean" clay sample from each oil-impacted area (if the confining layer is not distinct).
- Collect a grab water sample from each pit or oil-impacted area, if present and in volumes substantial enough to impact disposal logistics or cost.
- Collect a maximum of ten additional 2-foot deep manual soil recovery probe with hammer attachment cores from the facility to aid in delineation of any oil-impact area. No samples will be prepared from these cores, but depths of visual impacts will be noted.
- If needed, conduct field chemistry tests on an aliquot of each phase collected to determine if flammable.
- If needed, a field chemistry test may be conducted on an aliquot of each phase and of soil or sludge collected and to determine the presence and estimate the concentration of petroleum hydrocarbons, when the presence is questionable or it is not known if the concentrations is greater than or less than 1 percent oil and grease. Refer to Appendix D

for technical information relating to the hydrocarbon field chemistry test to be used on this project.

- If needed, measure the chloride concentrations of the water phases encountered in the facility equipment and oil-impacted areas using a conductivity/chloride meter.
- Package samples for delivery to lab.

The additional assessment and sampling activities anticipated to be completed for the E03612 facility include the following:

- Create one representative sample of the ASTs will be created by combining aliquot from each of the ASTs, in a representative volume, to form a single sample.
- Package samples for delivery to lab.

The specific details of the sampling activities required at each facility can not be determined until certain data from the baseline survey is available; therefore, site-specific addendums to this Work Plan will be prepared to outline these tasks once the baseline survey data is collected. If it is considered advisable and appropriate to conduct sampling activities in the field during the same trip as the baseline assessment, an addendum form will be used, and site-specific information will be hand-entered in the field. This addendum will receive all applicable approvals (verbal or written) before implementing. Refer to Appendix E for a copy of the addendum form to be used for this project. For this project, it is anticipated that sampling will be conducted during the same mobilization as the baseline assessment.

4.2 QA/QC Samples

The petroleum field-screening test will be conducted when applicable to determine the presence or absence of petroleum and to estimate the concentration. Calibration of the instrument will be conducted at the beginning of each batch. Kit-required QA/QC will be performed. This information is not intended to provide definitive quantification of hydrocarbons. An aliquot of all samples will also be analyzed at an off-site laboratory for definitive results.

Blind duplicate samples will be prepared for approximately 10% of the soil samples collected and approximately 10% of the water samples collected, to insure the laboratory has met their stated quality control limits, to ensure target analytes are not present in the blanks, and that percent differences for duplicates are acceptable. Refer to Section 6.0 "Sampling and Analysis" for additional information regarding the QA/QC of samples.

4.3 Sample Identification Numbers

Sample numbering will be based on three components: facility identifier (as in 09E1004- for USEPA ID 09-E-1004), area type (C for containment basin, P for pit, OA for oil-impacted soil area); and matrix (W for water, S for sludge, C for sediment/clay). For example:

<u>09E1004-C1-S</u> represents the sludge layer collected from containment basin No. 1 of oil production facility 09-E-1004.

<u>09E1013-OA2-W</u> represents the water layer collected from oil-impacted soil area No. 2 of oil production facility 09-E-1013.

5.0 EQUIPMENT CALIBRATION AND MONITORING

The following air monitoring instruments will be used to monitor gases in the breathing zone and headspace near the tank hatches, and sampling locations. NORM readings will be collected from half of the circumference of the tanks and half the linear distance of the flow lines.

<u>Instrument</u>	<u>Parameters</u>	Calibration Frequency
Four Gas Detector Portable Vapor Analyzer Gamma Radiation Monitor	% O_2 , % LEL, CO in ppm, and H_2S in ppm Organic vapors (in ppm) 1 to 500 μ R/hr	Prior to entering field Prior to entering field Prior to entering field

The air monitoring equipment will be calibrated using the appropriate span gas. Calibration gas spans and equipment checks will be recorded in the logbook. The radiation detection equipment will be calibrated using the appropriate check source. All background equipment readings will be recorded in the logbook before E & E accesses the facility.

6.0 SAMPLING AND ANALYSIS

All samples will be collected and samples for off-site analysis packaged according to USEPA protocols found in EPA/540/P-87/001, "A Compendium of Superfund Field Operations Methods", and applicable Standard Operating Procedures (SOPs). Field screening samples if collected, may be analyzed on site the day they are collected or analyzed upon return to the home office. Samples for NOW analysis will be shipped for overnight delivery or delivered by the sampler to the subcontracted laboratory.

Field screening for hydrocarbons will be conducted at the E & E warehouse using the Dexsil PetroFLAG system. Flammability testing, if needed, will be conducted using an ignition source to determine if the materials will readily combust or ignite when heated. Water quality tests, if performed, will be obtained using a YSI Model 63 pH, conductivity, temperature, and salinity meter.

An E & E subcontracted USACE-approved laboratory will provide laboratory analysis for full or partial-NOW parameters. The subcontracted laboratory will provide quality control data with analytical results and E & E will validate all data. Standard laboratory turnaround time is 14 days from sample receipt to return of verbal/faxed unreviewed analytical results and 21 days for return of hardcopy reviewed results. However, experience has shown that turn-around-time is typically longer and may extend to 4 to 6 weeks. The analytical turnaround time will affect the overall project schedule.

Data validation of the NOW related analysis will consist of a review of the analytical data and data for the blind field duplicate samples, to ensure the laboratory has met their stated quality control limits, to ensure target analytes are not present in the blanks, and that percent differences for duplicates are acceptable. Most of the sampling equipment will be dedicated; however, no rinse blank samples are required for non-dedicated sampling equipment (slam bar, JMC) according to LDNR and USEPA based on contract-specified analytical protocol.

Table 1, "Sampling Requirements Summary", contains information relating to sampling, such as the sample container types and the quantity to be collected at each sampling location, the preservation method to be used, and the sample holding times (based on the parameter being analyzed for and the matrix).

The following sampling equipment/media will be used to obtain environmental samples from the respective matrix of the pits, oil-impacted areas, and barge holds:

Parameter/Matrix	Equipment/Media	Fabrication	Dedicated
		_	
All ¹ /Sludge/Water	PVC or Triloc pipe, sludge judge,	butyrate	Y
	or soil recovery probe		
All ¹ /Soil	PVC, JMC or soil recovery probe sleeve	acetate	Y

Notes:

(1) Parameters are set according to LACXIX.129.B&M.7, Laboratory Procedures for Analysis of E&P Waste, LDNR, Office of Conservation IMD (Revised 1/89) (see Section 9.2).

7.0 STANDARD OPERATING PROCEDURES

7.1 Sampling SOPs

The following sampling SOPs will be implemented for this project. These are typically applicable procedures, which may be varied or changed as required, dependent upon site conditions, equipment limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final project deliverables.

General Field Sampling Guidelines (#2001)

Sampling is the selection of a representative portion of a larger population, universe, or body. Through examination of a sample, the characteristics of the larger body from which the sample was drawn can be inferred. In this manner, sampling can be a valuable tool for determining the presence, type, and extent of contamination by hazardous substances in the environment.

The primary objective of all sampling activities is to characterize a waste site accurately so that its impact on human health and the environment can be properly evaluated. It is only through sampling and analysis that site hazards can be measured and the job of cleanup and restoration can be accomplished effectively with minimal risk. The sampling itself must be conducted so that every sample collected retains its original physical form and chemical composition. In this way, sample integrity is insured, quality assurance standards are maintained, and the sample can accurately represent the larger body of material under investigation. The extent to which valid inferences can be drawn from a sample depends on the degree to which the sampling effort conforms to the project's objectives. For example, as few as one sample may produce adequate, technically valid data to address the project's objectives. Meeting the project's objectives requires thorough planning of sampling activities, and implementation of the most appropriate sampling and analytical procedures.

Sample Storage, Preservation, and Handling (#2003)

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Samples should be collected using equipment and procedures appropriate to the matrix, parameters and sampling objective. The volume of the sample collected must be sufficient to perform the analysis requested. Samples must be stored in the proper types of containers and preserved in a manner appropriate to the analysis to be performed.

All samples must be cooled to 4° C from the time of collection until analysis. When a preservative other than cooling is used, the preservative is generally added after the sample is collected, unless the sample container has been pre-preserved by the laboratory. If necessary, the pH must be adjusted to the appropriate level and checked with pH paper in a manner, which will not contaminate the sample.

Sampling Equipment Decontamination (#2006)

Removing or neutralizing contaminants from equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances.

The first step, a soap and water wash, removes all visible particulate matter and residual oils and grease. This may be preceded by a steam or high-pressure water wash to facilitate residuals removal. The second step involves a tap water rinse and a distilled/deionized water rinse to remove the detergent. An acid rinse provides a low pH media for trace metals removal and is included in the decontamination process if metal samples are to be collected. It is followed by another distilled/deionized water rinse. If sample analysis does not include metals, the acid rinse step can be omitted. Next, a high purity solvent rinse is performed for trace organics removal if organics are a concern at the site. Typical solvents used for removal of organic contaminants include acetone, hexane, or water. Acetone is typically chosen because it is an excellent solvent, miscible in water, and not a target analyte on the Priority Pollutant List. If acetone is known to be a contaminant of concern at a given site or if Target Compound List analysis (which includes acetone) is to be performed, another solvent may be substituted. The solvent must be allowed to evaporate completely and then a final distilled/deionized water rinse is performed. This rinse removes any residual traces of the solvent.

Soil Sampling (#2012)

Soil samples may be collected using a variety of methods and equipment. The methods and equipment used are dependent on the depth of the desired sample, the type of sample required (disturbed vs. undisturbed), and the soil type. Near-surface soils may be easily sampled using a spade, trowel, or scoop. Sampling at a greater depth may be performed using a soil recovery probe, hand auger, continuous flight auger, a geoprobe, a split-spoon, or, if required, a backhoe.

Surface Water Sampling (#2013)

Sampling situations vary widely, therefore, no universal sampling procedure can be recommended. However, sampling of both aqueous and non-aqueous liquids is generally accomplished through the use of one of the following samplers or techniques: Kemmerer bottle, Bacon bomb sampler, Dip sampler, or the direct method. These sampling techniques will allow for the collection of representative samples from the majority of surface waters and impoundments encountered.

Field Chemistry - Flammability

To ensure proper shipping of samples, flammability will be determined in the field. A long wooden stem cotton swab will be used to collect a representative aliquot of each phase encountered. A bunso-matic burner will be ignited. The cotton swab will slowly approach the bunso-matic flame. If the cotton swab ignites before it reaches the flame, then the sample is highly flammable. If the cotton swab ignites upon entering the flame, then the sample is flammable. If the cotton swab ignites upon entering the flame, but extinguishes once removed from the flame, then the sample is combustible. If the cotton swab does not ignite upon entering the flame, then the sample is neither flammable nor combustible.

Field Chemistry - Petroleum

A petroleum specific test kit will be used to determine the presence of petroleum hydrocarbons and estimate their concentration. Sample aliquots will be collected in a plastic "ziploc" type bag or wide mouth jar. The test specific procedures provided with the kit will be followed.

7.2 Documentation

All documents will be completed legibly and in ink. Any corrections or revisions will be made by lining through the original entry and initialing the change. The following sample documentation will be maintained:

Field Logbook

The field logbook is a descriptive notebook detailing site activities and observations so that an accurate, factual account of field procedures may be reconstructed. All entries will be signed by the individuals making them. Entries should include at least the following:

- site name and project number
- names of personnel on site
- dates and times of all entries
- descriptions of all site activities, including site entry and exit times
- noteworthy events and discussions
- weather conditions
- site observations
- identification and description of samples and locations
- subcontractor information and names of on-site personnel
- dates and times of sample collections and chain of custody information
- records of photographs
- site sketches

JOP GTSFDS

A JOP GTSFDS will be completed either by direct computer entry or by recording information onto a hardcopy form. All written entries will be made in ink. An example form is provided as Appendix C.

Sample Labels

Sample labels will be securely affixed to the sample container. They will clearly identify the particular sample, and should include the following information:

- site name and project number
- date and time the sample was collected
- sample preservation method
- analysis requested
- sampling location

Chain of Custody Record

A Chain of Custody Record will be maintained from the time of sample collection until final deposition. Every transfer of custody will be noted and signed for and a copy of the record will be kept be each individual who has signed it. The Chain of Custody Record should include at least the following information:

- sample identification
- sample location
- sample collection date
- sample information, i.e., matrix, number of bottles collected, etc.
- names and signatures of samplers
- signatures of all individuals who have had custody of the samples

When samples are not under direct control of the individual currently responsible for them, they will be stored in a locked container, which has been sealed with a Custody Seal.

Custody Seal

Custody Seals demonstrate that a sample container has not been opened or tampered with. The individual who has custody of the samples will sign and date the seal and affix it to the container in such a manner that it cannot be opened without breaking the seal.

7.3 Sample Handling and Shipment

Each of the sample bottles will be sealed and caps will be secured with custody seals. Sample bottles will be labeled as described above. Sealed bottles will be placed in the appropriate transport containers and the containers will be packed with an appropriate absorbent material such as vermiculite. All sample documents will be affixed to the underside of each transport container lid. The lid will be sealed and custody seals will be affixed to the transport container.

Regulations for packaging, marking/labeling, and shipping of hazardous materials and wastes are promulgated by the U.S. Department of Transportation (U.S. DOT). Air carriers, which transport hazardous materials, in particular Federal Express, require compliance with the current edition of the International Air Transport Association (IATA) Dangerous Goods Regulations, which applies to shipment and transportation of hazardous materials by air carrier. Following current IATA regulations will ensure compliance with U.S. DOT.

8.0 DELIVERABLES

The E & E Project Manager, David Beeson, will maintain contact with Lawrence K. Leahy, the USACE FOSC-R and Task Manager, to provide information regarding the technical and financial progress of the project. This communication will begin when the project is assigned. Activities under this project will be documented and reported in the deliverables described below.

Analysis

This sampling event requires an E & E subcontracted USACE-approved laboratory. Documentation of results will be provided in the analytical report.

Data Review

The subcontracted laboratory will provide quality control data with analytical results and E & E will validate all data.

Final Report

A final report will be prepared for each facility to correlate available background information with data generated under this project and identify supportable conclusions and recommendations, which satisfy the objectives of this Work Plan.

Maps/Figures

Individual Site Location Maps and Site Sketches will be provided as a part of the Work Plan Addendums and for the final reports.

9.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

9.1 Personnel Information

The USACE FOSC-R Mike Keen, will provide overall direction to the E & E staff concerning project objectives, sampling needs, and schedule. The E & E Project Manager, David Beeson, is the primary point of contact for the USACE FOSC-R. The Project Manager is responsible for the development and completion of the Sampling QA/QC Work Plan, project team organization, and supervision of all project tasks. The Project Manager is also the primary contact with the analytical laboratory. The Project Director, Jim Dellinger, will provide overall direction to the Project Manager and ensure adherence to QA/QC protocol. The E & E Site QC Coordinator, Justin Farrell is responsible for ensuring field adherence to the Sampling QA/QC Work Plan and recording any deviations. The following personnel will provide field support to this project during the first phase of operations:

Name Responsibility

Assessment and Sampling (First Mobilization):

Paul James Team Leader/Data Collector
Patrick Johnson Safety Officer/Data Collector
Justin Farrell Site QC Coordinator /Data Collector

Assessment and Sampling (Second Mobilization):

TBD Team Leader/Data Collector
TBD Safety Officer/Data Collector

TBD Data Collector

Assessment and Sampling (Third Mobilization):

TBD Team Leader/Data Collector
TBD Safety Officer/Data Collector

TBD Data Collector

9.2 Laboratory Information

The following laboratory will be providing the following analysis:

Lab Name/Location	Parameter	Citation ¹
Southern Petroleum Labs, Inc	LACXIX.129.B.7:	LDNR Lab Manuaf w/
500 Ambassador Caffery Pkwy	Total Metals	SW846 M6020
Scott, LA70583-8544	True Total Barium	SW846 M6020
Contact: Dwayne Coco	Oil & Grease	SW846 M9071A
(800) 304-5227	рH	SW846 M9045B
	Electrical Conductivity	SW846 M9050
	Sodium Absorption Ratio ³	SW846 M6020
	Exchangeable Sodium Ratio ³	SW846 M6020
	Cation Exchange Capacity ³	SW846 M6020
Southern Petroleum Labs, Inc	LACXIX.129.B.7:	LDNR Lab Manual ² w/
500 Ambassador Caffery Pkwy Scott, LA70583-8544	(Oil & Grease only)	SW846 M9071A
(800) 304-5227 Southern Petroleum Labs, Inc	pH Electrical Conductivity Sodium Absorption Ratio ³ Exchangeable Sodium Ratio ³ Cation Exchange Capacity ³ LACXIX.129.B.7:	SW846 M9045B SW846 M9050 SW846 M6020 SW846 M6020 SW846 M6020

Contact: Dwayne Coco

(800) 304-5227

Southern Petroleum Labs, Inc 500 Ambassador Caffery Pkwy Scott, LA70583-8544 Contact: Dwayne Coco (800) 304-5227	LACXIX.129.M.7: Chlorides Chemical Oxygen Demand Total Suspended Solids Sodium Absorption Ratio ³ Conductivity Oil & Grease pH	LDNR Lab Manuaf w/ EPA 110 EPA 410.4 EPA 160.2 SW846 M6020 STD Methods 2510B STD Methods 5520D EPA 150.1
Southern Petroleum Labs, Inc	RCRA Disposal Parameters	SW846/LDNR
500 Ambassador Caffery Pkwy	<u>-</u>	M9040B
Scott, LA 70583-8544	Ignitability	M1010/1020A
Contact: Dwayne Coco	Reactive Sulfides	Ch.7.3.4.2
(800) 304-5227	Reactive Cyanides	Ch.7.3.3.2
	Total Halogens	9076
	BTU	ASTM D240-02
	BS&W	D1796-97e1
	Total Metals	M6010/7471A
	TCLP-Volatile Organic Compound TCLP -Semi-Volatile Organic	M1311/8260B
	Compounds	M1311/8270C
	TCLP- Metals	M1311/6010B/7470A
	TCLP-Pesticide Compounds	M1311/8081A
	Herbicide Compounds	M1311/8151A

Notes:

- (1) Citation source for LDNR methodology was LDNR contracted laboratory: LABS, 600 Loire Street, Lafayette, LA 70507.
- (2) LDNR Lab Manual: <u>Laboratory Procedures for Analysis of Exploration & Production Waste</u>
 (Nonhazardous Oilfield Waste), Department of Natural Resources, Office of Conservation,
 Injection and Mining Division, August 1988 (Revised 1/89) (Reprinted 7/95).
- (3) For these methods only Sodium, Magnesium, Calcium or Potassium are analyzed. For greater detail see LDNR Lab Manual.

10.0 SCHEDULE OF ACTIVITIES

Activity	Start Date	End Date	
Planning Documents	02/03/03	02/14/03	
Background Research	02/03/03	02/24/03	
Assessment and Sampling	02/17/03	07/31/03	
Data Receipt	03/10/03	07/31/03	
Reporting	03/17/03	07/31/03	

Sampling QA/QC Work Plan 1st Q03-17 N LA OPA Sites February 10, 2003

TABLE:

1: Sampling Requirements Summary

APPENDICES:

A: List of Facilities

B: Site Location Maps

C: JOP GTSFDS Form

D: Dexil PetroFLAG Technical Information

E: Sampling QA/QC Work Plan Blank Addenda Form

	Table 1. Sampling Requirements Summary					
Remedial Unit	Program Area/ Sampling Objective	Matrix	Parameter*	Sample Container (Number total)	Sample Preservation	Sample Holding Time
Pit or Oil- Impacted Areas	Assessment/Threat Determination	Soil/ Sludge	LAC43XIX.129. B.7	1 L WM with Teflon lid (1)	4° C (1)	28 days ⁽¹⁾
	Assessment/Threat Determination	Soil/ Sludge	Oil and Grease	4 oz WM with Teflon lid (1)	4 ^o C ⁽¹⁾	28 days ⁽¹⁾
	Confirm presence of Petroleum and estimate concentration	Soil/ Sludge	Field test	plastic bag (1)	4 ^o C ⁽¹⁾	28 days ⁽¹⁾
	Assessment/Threat Determination	Water	M.7 pH and chlorides COD Oil & Grease TSS Metals	500 ml poly (1) 250 ml glass (1) 1 L glass (1) 500 ml poly (1) 500 ml glass (1)	pH<2 H ₂ SO ₄ pH<2 HCL No Additional	28 days 28 days
AST "slop oil" (E03612)	Assessment/Threat Determination and Disposal Options	Sludge/ Oily solids	Total halogens Total metals BTU BS&W	8 oz WM glass with Teflon lid (2)	4° C	28 days
			RCI TCLP-VOC TCLP-SVOC TCLP-Pest TCLP-Herb	1 L WM glass (1)	4° C	14 days
			Oil & Grease	4 oz WM with Teflon lid (1)	4° C	28 days

^{*} See Section 9.2 for method citations

⁽¹⁾ Recommendation - not required by method.

<u>APPENDIX - A</u> LIST OF FACILITIES

	APPENDIX A – LIST OF FACILITIES								
FPN	FPN JOP ID FACILITY NAME								
E03608	09-E-1047	TODD OIL PRODUCTION CO WELLS							
E03609	09-E-1048	JOSEPH C. HAWKINS - DOROUGH							
E03610	09-E-1049	HUSH OIL - HART							
E03611	09-E-1050	TODD OIL PRODUCTION CO - CRYSTAL OIL CO							
E03612	16-E-1003	TRANS-GULF PETROLEUM CORP - VARNER							
E03613	16-E-1004	C & W OPERATING - FARMER C							
E03614	16-E-1005	C & W OPERATING - R LAFFITTE							
E03615	43-E-1001	WESTEK RESOURCES, INC WHITEHURST							
E03616	43-E-1002	WESTEK RESOURCES, INC BASS							
E03617	09-E-1051	TODD OIL PRODUCTION CO - TAYLOR							
E03618	09-E-1052	TODD OIL PRODUCTION CO - TAYLOR A							
E03619	09-E-1053	SMITH RESOURCES (OIL COMPANY) - WASHINGTON							
E03620	09-E-1054	JACKSON WELL SERVICE - SKLAR GAMM							
E03621	09-E-1055	L.P. OPERATING COMPANY - ABNEY							
E03622	60-E-1004	HAROLD H. HOLLENSHEAD - PERKINS							
E03623	41-E-1001	H & B WELL SERVICE, INC DRAKE							
E03624	09-E-1056	BOBBIE J. LANGSTON - H.C. LANGSTON ET AL							

APPENDIX - B

SITE LOCATION MAPS

1st Quarter 03 North LA OPA Sites Springhill E03622 E03608 E03610 Union E03617 Claiborne E03618 E03611 **Bossier** Webster E03609 (60-1)E03624 E03619 E03620 Minden Lincoln ossier City Ruston E03621 Bienville Caddo Jackson (9-10) E03613 Red River E03614 (41-11) De Soto **•**Manstield (16-3)E03623 Winn E03612 Winnfield E03616 E03615 Grant Sabine (43-2)**Natchitoches** Pineville Alexandri **LEGEND Facility Location** City Interstate Scale **US Routes** 40 Miles Water Body Parish Boundary

APPENDIX - C

JOP GTSFDS FORM

FPN:	JOP ID:

Louisiana Abandoned Oil Facility Assessment JOP Ground-Truth Survey Field Data Sheet

E&E Survey Date(s):	•									
Date(s): Attending: LOSCO ID(s):					LDNR ID(s):					
Latitude: Longitude: GP.					Sec/T/R:			Size (in acres):		
			I	Diff						
			1	DOP						
Facility Name:								Jurisdicti	ional Zone:	
Oil Field Name:										
Quad Map (name and num	ber):									
Operator (name, telephone and address):	number,		downer (na ress):	ıme, te				ineral Rights Holder (name, lephone number, and address):		
ana aaaress).			<i>C55)</i> •					prone num	isoor, unu uuur ess).	
Access coordination:										
Number of anticipated com	ponents (No	ote any	not located	<i>d</i>):						
Containers: Wells:										
Containments:			Pits:							
Other:		•								

FPN:	JOP ID:
Nearest City (name, direction and distance):	
Directions to Site (by land or water from nearest main road a	nd/or waterway):
Is facility over water? Yes No Is w	ater impacted? Yes No
Distance from facility to known surface water or drainage	feetmiles
Drainage route to/from the facility to the Nearest Navigable	Waterway:
Nearest downstream waterway (Name, direction, and distanc	
Name A Duinking Water Comment of Late (name discretion on	J. J. 4
Nearest Drinking Water Source or Inlet. (name, direction and	d distance from facility). Is it impacted? Yes No
How many residents located within a 1-mile radius of the site	:
GIS Reviewer(s)(Initial reviewed components):	

FPN:		JC	P ID:
Type and Condition of Se	curity Features (i.e., fence, si	igns, gates):	
Describe Surrounding Pro	operty (all directions):		
N: S:			
<i>E</i> :			
W:			
Are There Visible Signs o	of Human or Wildlife Access	to the Site?	
Recommendations (note	"SPCC type" equipment defi	iciencies, removal potential, etc.)	
		se, area impacted, estimated quantity)	- Notify NRC/State/USCG
Immediately if impact pre	esent or immanent (NRC 1-80	00-424-8802):	
Equipment Utilized:			1
Equipment Name	Serial Number	Background Reading(s)	Background Location (note location on sketch)

FPN:	FPN: JOP ID:							
Well Status Table: Complete for each wo	ell							
Well Name and Number:								
Serial Number:	Latitude:	Longitude:	DOP:					
Well Status:	Condition:	Terrain:	<u> </u>					
Is Oil Leaking? Y/N								
Well Association:	Grade:	Elevation (inches	s):					
NORM/Air Monitoring:	<u> </u>	<u> </u>						
Comments (describe well,	pumping unit attached, etc.):							
Well Name and Number:								
Serial Number:	Latitude:	Longitude:	DOP:					
Well Status:	Condition:	Terrain:						
Is Oil Leaking? Yes / No	If Yes, Describe:							
Well Association:	Grade:	Elevation (inches)	Elevation (inches):					
NORM/Air Monitoring:	I	L						
Commonte (degenite anall	pumping unit attached, etc.):							
Comments (describe weu,	pumping unu auacnea, eic.):							

Well Status: Disconnected, Capped, Open Casing, Flowing, Not Flowing-Connected, Undetermined, and Not Located.

Condition: Corroded, Leaking, Seeping, Pool Around, Previous Signs of Leakage, Associated Pipe Leaking, and Associated Pipe Seeping.

Terrain: Upland, Lowland, Marsh, and Water.

Well Association: Tank battery signs, Verbal- Field Personnel, Proximity, Flow line (Visible), Flow line (Gradeometer), Flow line (Semi-Submerged)

Grade: Above, At, Below, Unknown

FPN:	JOP ID:							
Site Location Map (Include surrounding topography and connecting wells. Indicate coordinates for wells):								

FPN:	JOP ID:						
Site Sketch (Include location of oil spills, AST corrosion and holes, secondary containment, flowlines, drums, and any other oil production related equipment.):							

FPN:	JOP ID:
Additional Comments: (Document conversations with residents,	LDNR, etc)

FPN:				_	JOP ID:					
Photol Came	og ra/Lens (S	Serial No.,	model)							
Date	Time	Roll/ Frame	Dir.	Description	P	/W				

FPN:			_						JOP ID:	
Pit Sheet						P	it Name:	<u> </u>		
		and Estin	nate Ous	antities of Mate	rial	1 '	u itume.			
Latitude:	Tor caciff it	and Estin	DOP:	Length (ft.):	I			neter(ft):	LDNR Pit ID:	
Longitude:			Width (ft.)			Oil Depth (ft.):				
Location Reference:				Surface(ft): Outside Berm				nent h1 (ft.): nent	W LMHN	
				Height (ft.):				h2 (ft.):	WLMHN	
Orientation		1 \		Water			Sedin		***	
	Rectangular, Ci	rcular)		Depth (ft.):			Depti	h3 (ft.):	<u> </u>	
Liner Prese				Construction:				Construction		
· ·	ay, synthetic, e			(dirt, dirt and s	hell, ci	nderb	olock, etc)	(berm above	ground, sunken, etc)	
Breaches P	resent? Y/N	If Ye	s describ	pe:						
Surface Wa	ter Sheen? Y	N If Ye	s describ	pe:						
Water Pres	ent? Y/N	If Ye	s, Water	sampling result	s: p	Н:	Sali	nity:		
Norm/Air N	Monitoring:	I								
	9									
Describe aq	quatic life, veg	etation, w	ildlife, o	r any other signi	ificant	infor	rmation:			
	(include locat v hatch areas		es and	Core Descrip description):		inclu	de, core no	ame, total dept	h, recovery, layer depth and	
contaminat		oj son		Units (ft)	\boldsymbol{A}	В	<i>C</i>	ore Description		
Contamina				Total	А	ь	C	Cu	ne Description	
				Depth						
				Recovery						
				Depth 1						
				Depth 2						
	Depth 3									
				Depth 4						
Date	Time	Sample	C/G	Sampl	ler			Matrix	Description	
		ID								
						+				

Note: L-Light: 1-3% O/G, M-Medium: >3-20% O/G, H-Heavy: 1-3% O/G; N-None=<1% O/G; W-Wet(sludge) = >40% Moisture.

FPN:_									JOP ID:	
Comp	lete for	Area Sheet: each Oil Impacted cumulated elsewho	III	Oil-impaci	ed A	rea I	Name	:		
Latitud	le:		DOP	Length (ft.).	•		Wi	dth (ft.)	Diameter (ft.):	
Longiti	ude:			Oil Depth (ft.):				Soil Depth 1 (ft.):	Oil Impacted W L M H N	
Locatio	on Refere	Water Dept (ft.): Depth to So	il			Soil Depth 2 (ft.): Soil	Oil Impacted W L M H N Oil Impacted			
Describ	e source	vegetation, wildlife, o	r any o	Surface (ft. ther significa		ormati	ion:	Depth 3 (ft.):	W L M H N	
	/Air Mon	nitoring: inated Soil Area (inclu	ıde	Care Descr	intior	ı (incl	ude co	ore name total denti	h, recovery, layer depth and	
		s and north arrow):	uc	description):			_	· · · -	
				Units (ft) Total Depth Recovery	A	В	C	Со	re Description	
				Depth 1						
				Depth 2						
				Depth 3						
				Depth 4						
Date	Time	Sample ID	C/G	Sampler	 - 	1	Matrix Description			

Note: L-Light: 1-3% O/G, M-Medium: >3-20% O/G, H-Heavy: 1-3% O/G; N-None=<1% O/G; W-Wet(sludge) = >40% Moisture.

Container Sheet: Con	nplete f	or each Container	•			
Container Name:			Circ	c le one: Gauged /Estimated		
Latitude:	DOP	Shape:	Oil (ft.):	Oily Solids (ft.):		
Longitude:		Height (ft):	Water (ft.):	Other Matrix (ft.):		
Location Reference:		Diameter or (l x w) (ft):	Construction: (single wall steel, poly etc.)	Construction Type: (bolted, welded, etc.)		
			Condition Adequate? Y/N	I		
Features: Open Top; Man-	Way Ope	en; Open, Empty, Gas-f	ree; Rusted or Corroded; Free F	Flowing; Seepage		
			Monitoring			
Location: Inside Cont., Br	eathing 2	Zone, Outside Cont.	Location: Inside Cont., Brea	thing Zone, Outside Cont.		
Equipment:			Equipment:			
Readings:			Readings:			
Location: Inside Cont., Br	eathing 2	Zone, Outside Cont.	Location: Inside Cont., Brea	thing Zone, Outside Cont.		
Equipment:			Equipment:			
Readings: Additional Comments:			Readings:			
Container Sheet: Con Container Name:	nplete f	or each Container		e one: Gauged / Estimated		
Latitude:	DOP	Shape:	Oil (ft.):	Oily Solids (ft.): Other Matrix (ft.):		
Longitude:		Height (ft):	Water (ft.):			
Location Reference:		Diameter or (l x w) (ft):	Construction: (single wall steel, poly etc.)	Construction Type: (bolted, welded, etc.)		
			Condition Adequate? Y/N			
Features: Open Top; Man-	Way Ope		ree; Rusted or Corroded; Free F	Flowing; Seepage		
Lagation, Inside Cont. Dr	o othin o 7		Monitoring	thing Zong Outside Cont		
Location: Inside Cont., Br	eatning Z	Lone, Outside Cont.	Location: Inside Cont., Brea Equipment:	thing Zone, Outside Cont.		
Equipment: Readings:			Readings:			
Location: Inside Cont., Br	eathing 7	Zone Outside Cont	Location: Inside Cont., Brea	thing Zone Outside Cont		
Equipment:	catilling 2	zone, outside cont.	Equipment:	tining Zone, Outside Cont.		
Readings:			Readings:			
Additional Comments:						
Additional Comments.						

FPN:_____

FPN:									JOP ID:
		: Complete for es of Material	· each C	ontai	ner(s) and	Co	ntain	ment No	ıme:
Latitude:	<u>a Quantiti</u>	DOF	Lengt	Length & Width					Diameter (ft):
Longitude	? :		Inside	Inside Berm			l th 1 (1	G)	Oil Impact W L M H N
Location Reference: Oil			Oil	Oil			Depth 1 (ft.) Soil Depth 2 (ft):		Oil Impact W L M H N
			Water Depth			Soi:	l oth 3 (j	ft.)	Oil Impact W L M H N
Orientatio	n: (Irr, Rect.	, Cir.)			ufficient for l				
Is residual	l oil present?	Y/N	Is con	itainm	ent adequate	? Ca	ntain	ment Sam	pled? Y/N
Are Breech	hes present?	Y/N If Yes, a	lescribe b	reech	location:	<u> </u>			
Logation	Incida Cont	Describing Zone	Outside (ir Monitorin		Tont :	Duoothino	Zono Outsido Cont
Equipment Equipm		Breathing Zone,	Outside C	JOHL.	Equipment		.ont.,	breauning	Zone, Outside Cont.
Readings:					Readings:	•			
	ontainment (include location	of cores a	ınd	1	_		de, core no	ame, total depth, recovery, layer
	,				Units (ft)	A	B	С	Core Description
					Total Depth				
					Recovery				
					Depth 1				
					Depth 2				
					Depth 3				
					Depth 4				
Date	Time	Sample II	D	C/G	Sam	pler	I	l	Matrix Description

Note: L-Light: 1-3% O/G, M-Medium: >3-20% O/G, H-Heavy: 1-3% O/G; N-None=<1% O/G; W-Wet(sludge) = >40% Moisture.

FPN:	JOP ID:
------	---------

	"Liquid"	Sludge	Sludge	Sludge/Soil	Soil	Soil	
Name	Oil & Oily Solids (bbl)	Light (1-3% O/G) (yd³)	Medium (>3-20% O/G) (yd³)	Heavy (>20% O/G) (yd³)	Light (1-3% O/G) (yd³)	Medium (>3-20% O/G (yd³)	
Totals							

PRELIMINARY THREAT STATUS TABLE

FPN:	JOP ID:
Facilty Name:	Date:

			Possible	
Criteria (1)	Evaluated Specifications		Points	Points
Volume (Liquid)	1 Point per 5.8 bbl (41 points if greater than 238 bbl). (2)	bbl / 5.8 =		
Volume (Sludge) (3)	l Point per 60 yd ³ of sludge (impacted wet sediments with light oil contamination - sheening during agitation).	$yd^3 / 60 = $	Not to	
	1 Point per 12 yd ³ of sludge (impacted wet sediments with medium oil contamination - sheen present).	yd ³ /12 =	exceed 41 points	
Volume (Sludge or Soil) ⁽³⁾	l Point per 4 yd ³ of sludge/soil (impacted sediments/soils with heavy oil saturation).	$yd^3/4 = $	(additive by volume criteria).	
Volume (Soil) (3)	l Point per 46 yd ³ of soil (impacted soils with light oil contamination).	yd ³ /46 =	criteria).	
	1 Point per 9 yd ³ of soil (impacted soils with medium oil contamination).	$yd^3/9 = $		
Proximity to	Isolated compound > 5,000 feet in distance.		0	
Waterways (4)	Points = $[10 - (distance in ft/500 ft)]$ round to nearest whole number.	1-10		
	Over water or visible sheen on surface waters of off-site effluent drainage cor	stituents.	10	
	LDNR assigned value of 1 = 8 points	wells x 8 =	Not to exceed 16	
LDNR Well	LDNR assigned value of $2 = 6$ points	wells x 6 =	points	
Assigned Values	LDNR assigned value of $3 = 4$ points	wells x 4 =	(additive by	
	LDNR assigned value of 4 = 2 points	wells x 2 =	wells).	
	No rust, weeps, leaks, cracks, or breeches in pits.		0	
Container	Rusty, pitted, corroded, cracked, or evidence of breaching from pits.	5		
Condition (5)	Top open or holedPotential overflow from precipitation.	10		
	Weeping, seeping, or holed (including seepage through pit berm walls).		15	
Potential for	Hatches/containers welded or locked, or man ways removed.		0	
Dumping	Hatches/containers accessible, proximal to roads or transportation.		1-7	
	Containers open, pits, and proximal to roads or transportation.		8	
Accessibility to	Security features or fences present, not proximal to persons or wildlife.		0	
Wildlife and	Limited security features, accessible to persons or wildlife.	1-9		
Persons	Within 5,000 feet of residential area and open pits or containment with oil.		10	
		Total =	100	
Priority based on poin	nts: Low Threat (LT) 0-40 Substantial Threat (ST) 41-100			

Note:

(1) Qualitative interpretation prepared by Contractor, based on seven criteria deemed most significant in evaluating potential threat.

Ft = Feet (US).

- (2) A volume of 238 bbl scores the maximum number of points based on the definition of a major inland discharge being 10,000 gallons (238 bbl) [40 CFR 300].
- (3) For the purpose of estimating threat to the environment from oil in soils and/or sludge, five scenarios, which are most commonly encountered in field operations are presented to account for oil vs soil/water concentration in the matrix tested.
- (4) For the purpose of threat evaluation, a waterway is defined as any USGS identified water body or observed significant drainage structure.
- (5) The evaluation of container conditions should include observations of any container on-site including pits, but should be limited to those containers which contain product.

%	= Percent.	USGS = United States Geological Survey.	yd3	= Cubic yards.
Assessn	nent Remaining:			

= Pounds.

Source: EPA Region 6, 2001

 $Key: \quad bbl \quad = Barrels.$

<u>APPENDIX - D</u> DEXSIL PETROFLAG TECHNICAL INFORMATION

www.enviroequip.com

Dexsil PetroFLAG



FEATURES

- Portable kit for field use.
- Quantifies all fuels.
- Kit comes with everything you need to get started.
 NEW! High range extraction solvent for samples from 1000ppm to percent TPH.

Sales Index

Related Information:

Contact EnviroEquip for Technical Papers on this product

Other Dexsil Products

Dexsil Clor-n-Oil
Dexsil Titra-Lube TBN
Dexsil Titra-Lube TAN

Quantitative Test for Hydrocarbons in Soil

Use as a low cost method to screen your samples. Now you don't have to send all your collected samples to the laboratory for analysis. The PetroFLAG system provides the user with a complete method for analysing soil samples for the presence of petroleum hydrocarbons. The procedure takes 15 min. and up to 20 samples can be run concurrently.

So, what is it?

The PetroFLAG system is a field portable method for the determination of total petroleum hydrocarbons in soil, using a lightweight, rugged, hand held unit powered by a 9-volt battery. It is both safe and easy to use. PetroFLAG does not distinguish between aromatic and aliphatic hydrocarbons, but quantifies all fuels, oils, and greases as total hydrocarbons. Analysis of a 10-gram soil sample is performed using three simple steps: extraction, filtration, and analysis. The PetroFLAG system is completely field portable. Everything needed to perform ten soil tests can be conveniently carried to the job site in a briefcase size carrying case. The meter is menu driven for ease of use and utilizes an EEPROM memory system for safe data storage. Fifteen response factors are built into the analyzer for the user to select depending on the analyte of interest. Response factors correlate to fuels ranging from weathered gasoline to heavy crude oil. The results are displayed in ppm on a LCD. The lower limit of detection for most hydrocarbons is 10 ppm, except for weathered gasoline, which has a LLD of 200 ppm. Using the standard 10-gram sample, the analyzer has the ability to quantify all hydrocarbons up to 2000 ppm. A new High range extraction solvent option allows you to measure from 1000ppm up to percent TPH.

Kit Contents

- Hand-held, digital analyser
- Portable Electronic Balance
- Digital Countdown Timer
- Two Calibration Standard
- · Reagents for ten tests
- Carrying Case

Applications

PetroFLAG is well suited for large site where a gird sampling plan is the strategy of choice. In many cases a grid sampling plan would be ruled out due to the high cost of laboratory analysis. PetroFLAG allows the grid strategy to be used while providing the user with meaningful data for on-site decision making prior to submitting samples for expensive laboratory analysis. The use of PetroFLAG for grid sampling will help to economically locate and define the extent of the contamination, locate and define hot spots and help delineate the zero line.

This can prevent unnecessary drilling and sampling and will eliminate remobilization costs associated with waiting for laboratory results. Additionally, PetroFLAG is useful for tracking and evaluation the success of soil remediation projects such as bioremediation.

How PetroFLAG is Used:

Hydrocarbons are detected through a simple three step process. After being weighed out, the soil sample is first extracted with a solvent that effectively removes over 90% of the hydrocarbons present. The resulting extract is then filtered through a unique, non-clogging system that removes all particulate matter, even from clay and other difficult-to-filter samples. The filtrate is then added to a vial which contains an aqueous development solution. The vial is placed in the meter where a two channel turbidimeter measures the absorbance of the mixture and converts the reading into parts per million of

petroleum nyarocarbons. I ne result is alsplayed on the unit's LUD readout. $^{\circ}$ The instrument, reagents, vials, and balance are all contained in a carrying case that weighs less than 5 kilograms.

Comparison to Laboratory Test Methods

In recent trials the PetroFlag kit has provided valuable real-time data that correlates very well with the two most widely used laboratory methods. When split samples were sent for laboratory confirmation, the correlation was in excess of 90%. These results were obtained at an existing bioremediation site for diesel fuel contamination.

Specifications

Analytes Matrix Hydrocarbons

Soil

Detection Method Turbimetric Development Quantification Range MDL for Gasoline 1000ppm MDL 15ppm for Most Hydrocarbons

MQL of a 10 gram soil sample around 2500ppm. System can be used to measure ranges into the low percent levels

Analysis Time Official Method 15 min per sample. Multiple samples US EPA SW-846 Method 9074

Ordering Information

PF MTR 01

Petroflag Analyser/Carrying case with ten tests
Includes digital, handheld analyzer with carrying case, electronic
balance, timer, 10 Standard reagents, 2 calibration standards.
Reagents - Standard range reagents (10 Soil tests)
Reagents - Standard range 40 soil tests
Reagents - High range reagents (10 Soil tests). Also requires std

PF SRP 10 PF SRP CS

PF-HRD 10

range reagents Reagents - High range 40 soil tests. Also requires std range PF-HRD CS

reagents
12 Calibration Reagents (minimum order size)

PF CAL 12 PF CAL CS 48 Calibration Reagents

ENVIROEQUIP Your Environmental Equipment Supplier 154 Waverley Road, Malvern East VIC 3145 AUSTRALIA Tel: 61-3-9572-3600 Fax: 61-3-9572-3700

sales@enviroequip.com rentals@enviroequip.com admin@enviroequip.com



DEXSIL DEXSIL DEXSIL

Dexsil manufactures test kits and instruments for the detection and measurement of environmental contaminants in soil, oil, and water. Since 1977, we have been a leader in developing easy-to-use, accurate testing devices to make environmental analysis faster and less expensive.

Get the latest on Dexsil products:

PetroFLAG [see below...] Analysis System for Hydrocarbons in Soil

HYDROSCOUT [see below...] A Quantitative Test For Determining Water Concentration In Oil

L2000 PCB/Chloride Analyzer for the analysis of PCBs and other chlorinated organic compounds in soil and transformer oil

Clor-D-Tect Test Kits for analyzing used oil for chlorinated contaminants Clor-N-Oil PCB Test Kits for analyzing transformer oil for PCBs.



Quantitative Field Analysis of Hydrocarbons in Soil



PetroFLAG Can Be Used to Detect:

- Diesel Fuel
- Crude Oil
- Fuel Oils
- Kerosene
- Jet A
- Motor Oil
- Grease
- Transformer Oil
- Hydrocarbons
- Other

The PetroFLAG system provides the user with a complete method for analyzing soil samples for the presence of petroleum hydrocarbons. The procedure takes 15 minutes and up to 20 samples can be run concurrently. The complete analysis system is available for under \$700 and consumables run about \$10 per test.



How PetroFLAG is Used:

Hydrocarbons are detected through a simple three step process. After being weighed out, the soil sample is first extracted with a solvent that effectively removes over 90% of the hydrocarbons present. The resulting extract is then filtered through a unique, non-clogging system that removes all particulate matter, even from clay and other difficult-to-filter samples.

The filtrate is then added to a vial which contains an aqueous development solution. The vial is placed in the meter where a two channel turbidimeter measures the absorbance of the mixture and converts the reading into parts per million of petroleum hydrocarbons. The result is displayed on the unit's LCD readout. The instrument, reagents, vials, and balance are all contained in a carrying case that weighs less than ten pounds.

The PetroFLAG System

PetroFLAG has been available since early 1995 and hundreds of units are in use. Usersinclude state EPAs and DEPs as well as the Department of Energy and the Corp of Engineers. PetroFLAG has received SW-846 draft method approval number 9074 from EPA's Office of Solid Waste.

Required Training:

The PetroFLAG system is designed to be used by those with little or no experience in analytical or field chemistry. You will find that it is easier to use than any other field test you have tried. Users should be aware of QA/QC and safety procedures that are appropriate for field analysis. A free video is available that explains how the system works and provides details on how to run it.

What are PetroFLAG's Uses and Limitations?

PetroFLAG tests for a broad range of hydrocarbons including diesel fuel, kerosene, crude oil, motor oil, hydraulic fluid, grease, transformer oil, and #2,#4, and #6 fuel oils. While the method is not specific for any particular hydrocarbon, if the type of hydrocarbon is known, it may be accurately quantified.

If the hydrocarbon type is unknown, the instrument can be used as a general screen so that no false negative results are generated. The detection range is from 10 to 20000 parts per million. No chlorinated solvents are used in any part of the procedure. Moisture does not affect test results up to saturation (20-25% water). Usable temperature range is from 5° C to 45° C.

Light hydrocarbons such as fresh gasoline can be detected by PetroFLAG but only at high concentrations (>1000 ppm). It is generally recommended that PetroFLAG not be used for gasoline except as a general screen for high levels.

PetroFLAG does respond to PNAs such as anthracene and creosote and may be used to detect this class of compounds. Response settings have not been determined for PNAs and the response is not as linear as for other hydrocarbons.

The presence of naturally occurring hydrocarbons in soil, eg, vegetable oils, may cause high readings with PetroFLAG. This high bias can be compensated for by calibrating the instrument with a blank soil that contains an equivalent concentration of the naturally occurring material. Such a soil is usually found in an area surrounding the site of concern. PetroFLAG is unaffected by the presence of salt or surfactants. There are no known sources of negative interference for PetroFLAG.

PetroFLAG can be used anywhere

Comparison to Laboratory Methods-

PetroFLAG has been rigorously evaluated against methods 8015B (gas chromatography) and 418.1 (infrared analysis) at actual contaminated sites. As detailed in Evaluation of a New Field Test Kit for Determining Total Petroleum Hydrocarbon Concentrations in Soil at a Site Contaminated by Diesel Fuel by Keith Wright (available from Dexsil), PetroFLAG was compared to both the GC and the IR methods.

The resulting correlations were 89% for 8015B and 92% for 418.1. In a separate study of an oil and grease site (see Evaluation ofa Rapid Field Analytical Test Kit for Assessing Hydrocarbon Soil Contamination, Keith Wright and David Jermstad, available from Dexsil) the correlation between PetroFLAG and 418.1 was shown to be 90% with no false negatives and two false positive results.

Other studies are also available from Dexsil. Laboratory results for both 8015B and 418.1 may vary widely between laboratories because of different preparation and extraction techniques, so, when confirming PetroFLAG results with these methods, make sure that all of the details of the laboratory analysis are known.

[Dexsil, Clor-N-Oil, Clor-D-Tect, Clor-N-Soil, L2000 and PetroFLAG are registered trademarks of Dexsil Corporation.]



HYDROSCOUT[™]

A Quantitative Test For DeterminingWater Concentration In Oil

HYDROSCOUT Takes The Guess
Work Out Of Accepting Used Oil.

HYDROSCOUT
METER



T he collection, transport and treatment of used oil can be expensive and difficult. One of the common contaminates of used oil is dissolved water. Water contamination is an economic concern for everyone dealing with used oil because of the added cost associated with handling the water. Dexsil has developed HYDROSCOUT, a test that allows the user to assess the value of the oil before accepting and transporting what might be a large volume of dissolved water.

Each HYDROSCOUT comes with...

HYDROSCOUT is a field portable test that quantifies water concentration in oil over a range of 0-20%, or 0-100%. It's an easy, inexpensive test that can be run by a driver at any pick-up or transfer point during the transportation process. At a cost as low as \$3.00 per test HYDROSCOUT is an affordable method to determine the true value of the oil before acceptance.

How does it compare...

Laboratory methods can be expensive, time consuming and cannot be run on-site. Methods such as Karl Fisher require a large capital investment, costly reagents and a chemist or highly qualified technician to run the test. These issues make the Karl Fisher method impractical for companies not equipped for laboratory analysis. Distillation, another method frequently used, can be time consuming and does not provide the accuracy typically required. HydroScout solves all the problems associated with water analysis in used oil.

What level of water can be tested...

HYDROSCOUT is programmed to determine water content over two common ranges. Program A, the most widely used range, covers 0-20%, down to 0.15% v/v. Using the available dilution vials, Program B can be used to measure water content up to 100%. Both programs auto-calibrate and perform quality control checks to minimize false negatives and ensure accuracy.

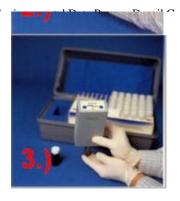
Results are obtained in less than 2 minutes...

The hand held HYDROSCOUT meter is a fast inexpensive on-site system that quantifies water concentration in used oil. The meter is menu driven for ease of use and has built- in quality control checks and an automated calibration feature.



Draw off a sample using the syringe. Wipe the excess off the syringe. Dispense the sample into the reaction tube

Break the ampule containing the pre-measured reagent and shake.



Insert the reaction tube into the HYDROSCOUT meter. Press the read button and the percentage of total dissolved water is displayed on the LCD screen.

All of the reagents are pre-measured, sealed in breakable glass ampules, and packaged in units of 40 tests (dilution vials, are available separately by the dozen). The rugged design of the meter and the stability of the reagents make it easy to store the system in any vehicle.

To learn more about the HYDROSCOUT or place an order please contact:

Dexsil Corporation One Hamden Park Drive Hamden, CT 06517 Phone: 203-288-3509 or 800-433-9745 Fax: 203-248-6523

E-Mail info@dexsil.com

Website: http://www.dexsil.com

Dexsil and HYDROSCOUT are registered trademarks of Dexsil Corporation.



METHOD 9074

TURBIDIMETRIC SCREENING METHOD FOR TOTAL RECOVERABLE PETROLEUM HYDROCARBONS IN SOIL

1.0 SCOPE AND APPLICATION

- 1.1 This method may be used to screen soil samples to determine the total amount of recoverable petroleum hydrocarbon contamination in soil including a wide range of fuels, oils, and greases. The turbidimetric approach in this method is designed to quickly screen soil samples using a system calibrated with a blank and a single calibration standard.
- 1.2 The definition of total recoverable petroleum hydrocarbons for this method can be found in the section on definitions (Sec. 3.0).
- 1.3 This screening technique is specifically designed to be used in the field but may also have some screening applications in the laboratory. The system analysis range is 10-2000 ppm for most hydrocarbons.
- 1.4 This method is considered a screening technique because of the broad spectrum of hydrocarbons it detects. The method may be especially useful in quickly determining that a site does not contain hydrocarbon contamination. However, it cannot be used to determine specific hydrocarbon compounds or groups of compounds that may be part of a larger hydrocarbon mixture. As with other screening techniques, it is advisable to confirm a certain percentage of both positive and negative test results, especially when near or above a regulatory action limit or when the presence of background or interfering hydrocarbons is suspected. The limitations of this procedure are described in more detail in the section on interferences (Sec. 4.0).
- 1.5 This method does not address the evaporation of volatile petroleum hydrocarbon mixtures (i.e. gasoline) during sample collection, preparation, and analysis. Although the screening kit can be used to qualitatively detect volatile hydrocarbons, it is NOT recommended that the system be used to quantitatively determine volatile petroleum hydrocarbons unless evaporation during sample handling is addressed, appropriate response factor corrections are made, and method performance is demonstrated on real world samples.
- 1.6 This method is restricted to use by or under the supervision of trained analysts. Each analyst must demonstrate the ability to generate acceptable results with this method.

2.0 SUMMARY OF METHOD

- 2.1 A 10 ± 0.1 g sample of soil is extracted with a solvent mixture composed primarily of methanol. The resulting mixture is allowed to settle and the free liquid is decanted into the barrel of a filter-syringe assembly. The liquid is filtered through a 0.2- μ m filter into a vial containing an aqueous emulsifier development solution. The filtered sample is allowed to develop for 10 minutes. During the development, any hydrocarbons present precipitate out and become suspended in solution.
- 2.2 The developed sample is placed in a turbidimeter that has been calibrated using a blank and a single calibration standard. A beam of yellow light at 585 nm is passed through the

sample and the scattering of light through the suspension at 90° is measured. The concentration of total recoverable petroleum hydrocarbons present is calculated relative to the standard curve.

3.0 DEFINITIONS

- 3.1 See Sec. 5.0 of Chapter 1 and the manufacturer's instructions for definitions associated with this analytical procedure.
- 3.2 For the purpose of this method, "total recoverable petroleum hydrocarbons" is defined as those hydrocarbons that are recovered using the solvent-specific extraction procedure provided with this kit. Since there is no cleanup step to separate any co-extracted naturally occurring hydrocarbons from the petroleum hydrocarbons, elevated turbidimetric readings are likely without performing background correction. See the interferences section (Sec. 4.0) for additional details.

4.0 INTERFERENCES

- 4.1 This method is considered a screening technique because of the broad spectrum of hydrocarbons it detects. It cannot distinguish between co-extracted naturally occurring hydrocarbons and petroleum hydrocarbons. Using background correction and/or a selected response factor discussed in the manufacturer's instructions, an analyst may be able to eliminate some of the interferences caused by co-extracted naturally occurring hydrocarbons. However, it is very difficult to find a truly clean, representative sample for use as a background.
- 4.2 This method has been shown to be susceptible to interference from vegetable oils (positive interference). It is anticipated that co-extracted naturally occurring oils from vegetative materials would be one of the most probable positive interferants found in the field. To demonstrate this interference, standard soil samples were spiked with corn oil at levels of 50 to 1000 ppm and tested with PetroFLAGTM system. Soil samples spiked with mineral oil were also analyzed for comparison. These data indicate that, over the range tested, the slope of the PetroFLAGTM vegetable oil response is approximately 18% of the response of the mineral oil standard. Supporting data are presented in Table 2.
- 4.3 This method has been shown to be susceptible to interference from water (negative interference). To demonstrate this interference, soils were spiked with diesel fuel at 100 ppm. The samples were then spiked with varying amounts of water, up to saturation. The samples were analyzed using the PetroFLAG™ system and the results were below that expected for the spike added. The low bias may be due to a decrease in extraction efficiency in samples containing large amounts of water, as a result of dilution of the extraction solvent. Supporting data are presented in Table 3.
- 4.4 This method has been shown to NOT be significantly affected by up to 5% sodium chloride contamination. Supporting data are presented in Table 6.
- 4.5 This method has been shown to NOT be significantly affected by up to 1000 ppm of common surfactants such as trisodium phosphate (TSP), soap, and sodium dodecyl sulfate (SDS). Supporting data are presented in Tables 7, 8, and 9.
- 4.6 Polycyclic aromatic hydrocarbons (PAHs) are a class of compounds present in many hydrocarbon mixtures that are detected by the PetroFLAG system. These compounds are often targeted because of their toxic characteristics and may be present individually as soil contaminants.

However, the response of the individual PAHs varies greatly from compound to compound. Therefore, use of the PetroFLAG system to quantitate individual PAHs is not recommended without good knowledge of the site and after adjusting the analytical approach. Quantitation of PAHs as part of a larger hydrocarbon fraction, such as diesel fuel, is recommended. Supporting data are presented in Table 12.

- 4.7 The PetroFLAG™ analyzer can be used at temperatures from 4°C to 45°C. The analyzer is equipped with an on-board temperature sensor to measure the ambient temperature at which measurements are being made. The software uses this temperature reading to correct the optical drift caused by temperature fluctuations.
- 4.8 Temperature at which the calibration is run should be recorded because of the effect temperature has on the suspension. This can be done by taking a reading without inserting a vial. If, during sample analysis, the temperature fluctuates more than $\pm 10^{\circ}$ C from the temperature at the calibration, the calibration should be rerun at the new temperature.

5.0 SAFETY

Safety practices appropriate for handling potentially contaminated hazardous or toxic samples and extraction solvents should be employed.

6.0 EQUIPMENT AND SUPPLIES

PetroFLAG[™] Hydrocarbon Analysis System, (Dexsil Corporation, One Hamden Park Drive, Hamden, CT), or equivalent. Each commercially-available test kit will supply or specify the apparatus and materials necessary for successful completion of the test.

7.0 REAGENTS AND STANDARDS

Each commercially-available test kit will supply or specify the reagents necessary for successful completion of the test. Reagents should be labeled with appropriate expiration dates, and reagents should not be employed beyond such dates.

8.0 SAMPLE COLLECTION, PRESERVATION, AND STORAGE

- 8.1 See the introductory material to this chapter, Organic Analytes, Sec. 4.1.
- 8.2 Soil samples may be contaminated, and should therefore be considered hazardous and handled accordingly. All samples should be collected using a sampling plan that addresses the considerations discussed in Chapter Nine.
- 8.3 To achieve accurate analyses, soil samples should be well homogenized prior to testing. The hydrocarbons may not be evenly distributed in a soil sample and extensive mixing is necessary to assure homogeneity.

NOTE: It is strongly recommended that any free aqueous liquid be decanted from samples prior to analysis with the PetroFLAG system. Free aqueous liquid will dilute the extraction solvent and produce a negative interference.

NOTE: When users of the PetroFLAG system wish to report their results on a dry weight basis, additional representative samples should be collected for percent moisture determination. See the extraction Methods 3540 or 3550 for the procedure for determining percent moisture.

9.0 QUALITY CONTROL

- 9.1 Follow the manufacturer's instructions for quality control procedures specific to the test kit used. Additional guidance on quality control is provided in Chapter One.
- 9.2 Use of replicate analyses, particularly when results indicate concentrations near the action level, is recommended to refine information gathered with the kit.
- 9.3 Method 9074 is intended for use as a screening procedure in either the field or a fixed laboratory. Wherever it is employed, a quality assurance program appropriate for a screening procedure should be employed as a means of documenting the quality of the resulting data.

10.0 CALIBRATION AND STANDARDIZATION

See the PetroFLAG[™] Hydrocarbon Analyzer User's Manual for instruction on generating an initial calibration curve using the PetroFLAG[™] analyzer. Contact the manufacturer for specific details on the calibration calculations programmed into the PetroFLAG[™] analyzer.

11.0 PROCEDURE

Follow the manufacturer's instructions in the PetroFLAG[™] Hydrocarbon Analyzer User's Manual to extract, develop, and analyze soil samples. Those test kits used must meet or exceed the performance specifications indicated in Tables 1 through 3.

12.0 DATA ANALYSIS AND CALCULATIONS

Consult the PetroFLAG[™] Hydrocarbon Analyzer User's Manual for the procedure used to generate concentration readings from samples using the PetroFLAG[™] analyzer. Contact the manufacturer for specific details on the concentration calculations programmed into the PetroFLAG[™] analyzer.

13.0 METHOD PERFORMANCE

13.1 Method Detection Limits were determined using a modification of the procedures in Chapter One and in 40 CFR, Part 136. The procedure was modified slightly because the instrument automatically subtracts an average blank value for each analysis (blank analysis is part of the calibration procedure of the PetroFLAGTM test system). Two sets of seven samples each were prepared, one set spiked with 30 ppm of diesel fuel, and one set spiked with 30 ppm of used motor oil. The standard deviation (SD) of the results for each oil type were calculated. The method detection limit (MDL) was determined by multiplying the SD by the Student's t value (3.143). These data are presented in Table 1. The MDL for diesel fuel was 13 ppm and for used motor oil was 18.6 ppm (Ref 1).

- 13.2 Samples of a standard soil were prepared by spiking with either diesel fuel or used motor oil at 100 ppm intervals from 100 ppm to 1000 ppm. Each sample was analyzed in duplicate by the PetroFLAGTM system and by Methods 3550 and 8015B. The results are shown in Table 4. These data were analyzed using regression analysis. The results of the regression analysis are also provided in Table 4. In addition, an analysis of variance (ANOVA) analysis was performed. The F-statistic from the ANOVA revealed a significant bias between the two methods, with the PetroFLAGTM providing consistently higher values for both types of contamination. The results confirm that the kit design is intentionally conservative, in that it favors a high bias in order to avoid reporting false negative results (Ref. 1).
- 13.3 Precision and bias were determined by analysis of variance (ANOVA) of the results obtained from spiked soil samples. Four sets of spiked samples were prepared, containing either diesel fuel or used motor oil at two different concentrations (200 and 1000 ppm). Each analyte at each concentration was analyzed in duplicate 10 times (e.g., 20 replicates of each). The results were transformed into recovery data. The ANOVA used these transformed data. The results are presented in Table 5. The F-statistic for the diesel fuel analysis indicate a slight day effect for these samples. The F-statistic seems to be driven more by the very low value of the mean square error within days rather than by any large value for the mean square error between days (Ref. 1).
- 13.4 The response of the PetroFLAG System to a soil spiked with 500 ppm of diesel fuel and 0 to 5% of dry sodium chloride is provided in Table 6 (Ref. 2).
- 13.5 The responses of the PetroFLAG System to a soil spiked with 500 ppm of diesel fuel and up to 1000 ppm of common surfactants such as trisodium phosphate (TSP), soap, and sodium dodecyl sulfate (SDS), are presented in Tables 7, 8, and 9 (Ref. 2).
- 13.6 Performance of the PetroFLAG[™] system on anthracene from 100 to 2000 ppm and on creosote from 100 to 1000 ppm are presented in Tables 10 and 11, respectively. An explanation of the erratic performance of anthracene is provided in the Table 10 narrative (Ref. 2).
- 13.7 The performance of the PetroFLAG system for several PAHs relative to the mineral oil calibrator on soil is presented in Table 12 (Ref. 4).
- 13.8 Performance of the PetroFLAG™ system on Jet-A from 40 to 2808 ppm (Ref. 4) and on gasoline from 1000 to 4070 ppm (Ref. 2) are provided in Tables 13 and 14, respectively. An explanation of the performance of Jet-A and gasoline are provided in the narrative in Tables 13 and 14.

14.0 POLLUTION PREVENTION

This method does not use any halogenated solvents and may be used to help reduce the number of samples sent to the laboratory under certain project scenarios. Traditional laboratory extraction methods (i.e. Soxhlet or sonication) would generally require much larger volumes of solvent to extract the sample.

15.0 WASTE MANAGEMENT

Waste management procedures must be consistent with federal, state, and local regulations.

16.0 REFERENCES

- 1. Data Validation Package, *Testing for Petroleum Hydrocarbons in Soil by Turbimetric Analysis*, PetroFLAG™ Test System, DEXSIL Corp., Hamden, CT.
- 2. Supplementary Validation Data, Additional Analyte and Contaminant Testing Data for the PetroFLAG Hydrocarbon Analysis System, DEXSIL Corp., Hamden, CT, August 24, 1995.
- 3. PetroFLAG™ Hydrocarbon Analyzer User's Manual, DEXSIL Corp., Hamden, CT.
- 4. Supplementary Data Validation Package III, Additional Analyte Testing Data for Petroleum Hydrocarbons in Soil by Turbimetric Analysis PetroFLAG Test System, DEXSIL Corp., Hamden, CT, June 20, 1997.
- 5. Supplementary Data Validation Package IV, *Polycyclic Aromatic Hydrocarbon Response data* for Method 9074 Petroleum Hydrocarbons in Soil by Turbimetric Analysis PetroFLAG Test System, DEXSIL Corp., Hamden, CT, August 22, 1997.
- 17. TABLES, DIAGRAMS, FLOWCHARTS, AND VALIDATION DATA

The pages to follow contain Tables 1 through 14.

TABLE 1

METHOD DETECTION LIMIT FOR PetroFLAG TEST SYSTEM

Trial #	30 ppm diesel fuel	30 ppm motor oil
1	34	35
2	24	41
3	28	40
4	34	53
5	36	46
6	32	48
7	30	42
Average (ppm)	31.03	43.6
SD (ppm)	4.12	5.91
MDL (ppm)	13.0	18.6

Data from Reference 1.

TABLE 2

RELATIVE RESPONSE OF VEGETABLE OILS AS AN INTERFERANT

Analyte Spike Concentration (ppm)	Mineral Oil Response (ppm)	Vegetable Oil Response ^a (ppm)
50	55	30
100	100	45
200	189	94
500	504	111
1000	947	208

^a The vegetable oil samples were analyzed using the PetroFLAG system set to response factor 10. The slope of the PetroFLAG vegetable oil response is approximately 18% of the response of the mineral oil standard. This means that a sample containing 5,560 ppm vegetable oil would provoke a response equivalent to that given by 1,000 ppm mineral oil.

Data from Reference 1.

TABLE 3
EFFECT OF WATER ON PetroFLAG RESULTS

% Water Saturation (% Water)	% Recovery of Mineral Oil ^a
0 (0)	100
5 (1)	94
25 (5)	98
50 (10)	95
100 (20)	85

^a Soil sample spiked with 100 ppm of mineral oil. (Ref. 1)

TABLE 4

COMPARISON OF PetroFLAG AND GC TEST RESULTS

Spike Conc. (µg/g)		FLAG g/g)	3550/8015B (μg/g)		
Diesel Fuel	Trial 1	Trial 2	Trial 1	Trial 2	
100	112	116	73	82	
200	230	248	158	156	
300	312	370	242	218	
400	420	455	299	275	
500	538	564	342	344	
600	626	654	460	439	
700	774	790	509	494	
800	910	900	612	607	
900	1091	977	678	614	
1000	1182	1062	646	649	
Corr Coef	0.0	999	0.992		
Slope	1.1	126	0.679		
Intercept	-2	2.8	30.5		
- M (O''	T: 14	T: 10	T: 14		
Motor Oil	Trial 1	Trial 2	Trial 1	Trial 2	
100	121	128	123	82	
200	243	292	200	200	
300	381	408	301	275	
400	428	497	341	343	
500	531	554	441	452	
600	654	668	534	528	
700	717	771	609	652	
800	880	883	711	746	
900	931	1052	835	881	
1000	1014	1098	887	846	
Corr Coef		998	0.997		
Slope		02	0.887		
Intercept	50.9 20.5).5	

Data from Reference 1.

TABLE 5

ANOVA RESULTS FOR SPIKED PETROLEUM HYDROCARBON SAMPLES

Analyte/Concentration	n	Mean (⊼)	Variance (σ _{n-1} ²)	Standard Deviation ($\sigma_{{}_{n-1}}$)	Standard Error (σ _∞)
Diesel, 200 ppm	20	1.09	0.0059	0.0768	0.0172
Diesel, 1000 ppm	20	1.00	0.00430	0.0656	0.0147
Motor Oil, 200 ppm	20	1.12	0.00266	0.0515	0.0115
Motor Oil, 1000 ppm	20	0.937	0.000919	0.0303	0.00678

Data from Reference 1.

TABLE 6

RESPONSE OF PetroFLAG SYSTEM WITH VARIOUS LEVELS OF SODIUM CHLORIDE^a

	% Sodium Chloride				
	0	0.5	1.0	2.0	5.0
PetroFLAG Response (ppm)	518	539	529	516	524

^a A series of soil samples consisting of sand, clay, and topsoil was spiked with 500 ppm of diesel fuel and varying levels of dry sodium chloride (NaCl) from 0 to 5 percent. The samples were analyzed using the PetroFLAG system set to response factor 5 (Ref. 2).

TABLE 7

RESPONSE OF PetroFLAG SYSTEM WITH VARIOUS TSP CONCENTRATIONS^a

	TSP Concentration (ppm)				
	0	100	200	500	1000
PetroFLAG Response (ppm)	522	511	512	500	492

^a Response of the PetroFLAG system for soil containing 500 ppm of diesel fuel and various levels of trisodium phosphate(TSP), a common surfactant. The samples were analyzed using the PetroFLAG system set to response factor 5 (Ref. 2).

TABLE 8

RESPONSE OF PetroFLAG SYSTEM WITH VARIOUS SOAP CONCENTRATIONS^a

	Soap Concentration (ppm)				
	0	100	200	500	1000
PetroFLAG Response (ppm)	500	494	488	502	528

^a Response of the PetroFLAG system for soil containing 500 ppm of diesel fuel and various levels of soap (non-ionic and anionic surfactants). The samples were analyzed using the PetroFLAG system set to response factor 5 (Ref. 2).

TABLE 9

RESPONSE OF PetroFLAG SYSTEM WITH VARIOUS SDS CONCENTRATIONS^a

	SDS Concentration (ppm)				
	0	100	200	500	1000
PetroFLAG Response (ppm)	472	474	488	486	496

^a Response of the PetroFLAG system for soil containing 500 ppm of diesel fuel and various levels of sodium dodecyl sulfate, a surfactant. The samples were analyzed using the PetroFLAG system set to response factor 5 (Ref. 2).

TABLE 10

RESPONSE OF PetroFLAG SYSTEM WITH VARIOUS AMOUNTS OF ANTHRACENE®

	Anthracene Conc. (ppm)				
	100	200	500	1000	2000
PetroFLAG Response (ppm)	798	1376	1641	1380	1735

^a Response of the PetroFLAG system for soil containing various levels of anthracene. The results show that the PetroFLAG system returns a strong response to anthracene. The response to anthracene is higher than response to the calibrator, therefore, the meter displays a reading overestimating the concentration. For concentrations greater than 200 ppm, the turbidity developed exceeds the recommended level (i.e. a reading greater than 1000 on response factor 10). To obtain accurate results the user should rerun the sample using a smaller sample size. This will bring the results into linear range. The samples were analyzed using the PetroFLAG system set to response factor 10 (Ref. 2).

TABLE 11

RESPONSE OF PetroFLAG SYSTEM WITH VARIOUS AMOUNTS OF CREOSOTE^a

	Creosote Conc. (ppm)			
	100	200	500	1000
PetroFLAG Response (ppm)	103	210	538	1043

^a Response of the PetroFLAG system for soil containing various levels of creosote. The samples were analyzed using the PetroFLAG system set to response factor 8 (Ref. 2).

TABLE 12

RELATIVE RESPONSE OF PetroFLAG SYSTEM TO VARIOUS POLYCYCLIC AROMATIC HYDROCARBONS^a

Compound	Spike Level in ppm (Matrix Used)	PetroFLAG Reading in ppm (Rf 10)	Response Relative to Mineral Oil Calibrator
Anthracene	100 (Soil)	798	8
Benzo[a]pyrene	50 (Soil)	180	3.6
Chrysene	16 (Solvent)	172	11
Fluoranthene	200 (Solvent)	101	0.5
Pyrene	200 (Solvent)	216	1.1

The data for anthracene and benzo(a)pyrene were generated by spiking each compound onto a composite sandy clay loam soil and homogenizing the sample for later analysis. The soil sample size was 10 g. The soil spiking procedure used for anthracene and benzo(a)pyrene produced inconsistent results for the other PAH compounds. These compounds (chrysene, flouranthene, and pyrene), which are very soluble in the extraction solvent, were spiked directly into the extraction solvent and analyzed. All of the PAHs samples were analyzed on response factor 10 (the correct response factor for mineral oil). The data indicate that, for example, using a standard sample size analyzed on response factor 10 (the correct response factor for mineral oil), a 100 ppm anthracene sample read 798 ppm. The PetroFLAG response to the above analytes is equal to or greater than the calibrator in all cases except for fluoranthene which has a response equivalent to diesel fuel.

<u>NOTE</u>: When analyzing soils containing anthracene, benzo(a)pyrene, or chrysene the PetroFLAG meter will read over range for concentrations of 250, 550, and 180 ppm respectively. These soils can be analyzed using a 1 gram sample size to increase the maximum quantifiable concentration.

TABLE 13

RESPONSE OF PetroFLAG SYSTEM WITH VARIOUS AMOUNTS OF JET-A^a

	Jet-A Conc. (ppm)							
	0	40	79	198	397	793	1586	2776
PetroFLAG Response (ppm)	54	110	162	208	368	700	1592	2808

Response of the PetroFLAG system for soil containing various levels of Jet-A. The composite soils were prepared from two types of clay-loam soil and sand. The component soils were air dried and sieved to remove particles larger than 850 μm and then mixed in the ratio 2:1:1, followed by tumbling for one hour. The soil was weighed out into 10 g aliquots. Each of the soil aliquots was spiked by direct injection of Jet-A fuel onto the soil using a microliter syringe, mixed, and analyzed by the PetroFLAG system with the instrument set to response factor 4. The coefficient of determination (r²) for the Jet-A data was 0.997, indicating that the PetroFLAG response was linear over the range 40 ppm to 2808 ppm (Ref. 4).

TABLE 14

RESPONSE OF PetroFLAG SYSTEM WITH VARIOUS AMOUNTS
OF WEATHERED GASOLINE^a

	Weathered Gasoline Conc. (ppm)				
	1000	2040	3050	4070	
PetroFLAG Response (ppm)	285	1780	4335	6870	

^a Response of the PetroFLAG system for soil containing various levels of weathered gasoline (50% evaporated). The manufacturer recommends that PetroFLAG be used to qualitatively detect gasoline at these levels. It is not recommended that PetroFLAG be used quantitatively for gasoline unless significant response factor corrections are made and evaporation of the target hydrocarbons is addressed. The samples were analyzed using the PetroFLAG system set to response factor 2 (Ref. 2).

Description

Colorimetric indicator tests are self-contained analytical kits that use a chemical reaction that produces color to identify contaminants, both qualitatively and quantitatively. Numerous different colorimetric indicators are used in the environmental field, in applications ranging from health and safety monitoring to definitive, quantitative site characterization. Colorimetric test kits also can be used after the initial site characterization phase to monitor the operating conditions of a remediation system or to confirm that contaminated soils have been removed

Several innovative technologies are listed below. The examples of indicator tubes and reagent kits, although not comprehensive, represent the diverse group of products that are available commercially and are used widely. Examples presented here are:

- The Hanby Field Test Kit
- The Clor-N-Oil and Clor-N-Soil kits
- The PetroFLAG™
- The AccuSensor®
- The Envirol Quick Test™



Typical Uses

Colorimetric indicators have many uses in the field, from health and safety monitoring to quantitative analysis. There are numerous advantages to using colorimetric indicators in the field, including speed, portability, ease of use, low cost per sample, and the range of contaminants that can be analyzed. A beginner can immediately begin to use some of the more basic colorimetric indicators, such as colorimetric indicator tubes. While more sophisticated reagent kits are designed specifically for easy operation, a background in environmental science and chemistry and familiarity with field analytical techniques is helpful to the operator.

EPA has approved colorimetric methods for the following contaminants:

Method Number	Method Name
8510	Field Method for RDX in Soil
8515	TNT in Soil by Colorimetric Screening
9078	Screening Test Method for PCB in Soil
9079	Screening Test Method for PCB in Tranformer Oil

Other useful resources for EPA test methods include:

- EPA Region 1 Index to EPA Test Methods
- EPA SW-846 Test Methods

Theory of Operation

Colorimetric indicator tests are available for analysis of air, water, and soils. Many colorimetric tests are designed for quick, qualitative analysis when only a positive or negative indication of the presence of a contaminant is needed. Others provide a semiquantitative measure of the concentration of a contaminant. Still other kits are quite sophisticated, using detailed sample preparation and electronic detection equipment to provide reliable, quantitative results. Almost all colorimetric kits share several common characteristics, including ease of use, low cost, and the production of relatively fast results. The following paragraphs discuss the specific operational theories of several common kits that cover a range of sample media.

Indicator Tubes

Indicator tubes are designed to analyze samples of air and gases. Sealed glass tubes are filled with a reagent specifically sensitive to a target gas. If the target gas is present in an air sample drawn through the tube, a color change will occur in the tube's reagent layer. Indicator tubes are used most frequently for indoor or outdoor health and safety monitoring. Common health and safety uses include the measurement of ambient air in the breathing zone of field personnel. The tubes also can be used to directly characterize ambient air and soil gas on hazardous waste sites. The tubes also can be placed in a tank, down a sewer, at the top of a monitoring well, or in many other locations to detect gases and vapors produced by solids and liquids, such as soils, sludges, and groundwater. The data obtained from indicator tubes are considered to be only qualitative or semiquantitative.

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Reagent kits also have been designed for analysis of water. Some reagent kits provide solvents that are used to extract analytes from soils and other solids into a liquid medium for analysis. Various reagent kits use chemical reactions specific to particular compounds that produce color in the visible spectrum. The change in color indicates the presence of the target compound, while the compounds are quantified if the intensity of the color produced can be compared with the color of standards of known concentrations. The level of certainty will vary depending on whether the intensity of the color is compared visually with a color chart or precise calibrated electronic detectors are used. Presented below is a brief discussion of the theory of operation of several reagent kits.

The Hanby test specifically responds to aromatic compounds found in fuels and polychlorinated biphenyls (PCB). The test is based on the Friedel-Crafts alkylation reaction, in which aromatic substitution produces very large molecules having a high degree of electron dislocation. Such molecules cause intense coloring. An acid catalyst is added to the sample to precipitate the reaction product. Comparisons of the intensity of color produced can be made either visually with a color chart or photometrically with a reflective photometer.

The Clor-N-Soil and Clor-N-Oil PCB kits use an indicator solution of mercuric nitrate and diphenyl carbazone. The two compounds, if left alone, react with each other to create a vivid purple color. Metallic sodium, which comes with the kit, is used to strip chloride ions from the PCBs (or other chlorinated molecules); the presence of chloride ions inhibits the reaction of mercuric nitrate and diphenyl carbazone and reduces the intensity of the color change. Contrary to the manner in which other colorimetric indicator kits work, the concentration of chlorine in the sample is inversely proportional to the degree of color change.

The principal of operation of the AccuSensor[®] is based on the Fujiwara reaction. The Fujiwara reaction, first reported in 1916, is the reaction of geminal species with pyridine in the presence of water and hydroxide ions to form a visible light-absorbing product. AccuSensor[®] tests have been developed for trichloroethene (TCE), total trihalomethanes (THM) in chloroform equivalent; benzene, toluene, ethylbenzene, and xylenes (BTEX); and tetrachloroethylene (PCE) in water.

The Envirol Quick Test™ uses a photochemical reaction that produces a color proportional to the concentration of the analyte of interest. It is used to identify pentachlorophenol (PCP) in soil and water, trinitrotoluene (TNT) in soil, and carcinogenic polycyclic aromatic hydrocarbons (PAH) in soil. A small portable photometer called the Envirometer is used to measure the color intensity. The Envirometer uses a standard curve stored in the memory of the unit to quantify the concentration of the analyte.

System Components

The amount of equipment included with each colorimetric kit varies widely by the type and manufacturer of the kit. Some kits come with color wheels or color charts to be used for semiquantitative analysis; electronic analyzers that detect and analyze the color change electronically also may be ordered with many kits. The complexity of the kit will depend on the type of test, the sample medium, and the level of data quality produced.

The only equipment necessary to use indicator tubes are the tubes and a hand pump. To work properly, the tubes and pump must be obtained from the same manufacturer because the pumps are designed to deliver specific volumes of air to which the individual tubes tests are calibrated.

Most reagent kits on the market contain several basic pieces of equipment, including sample containers, reagents, and calibration standards. Some kits provide color charts to be used in estimating the degree of color intensity (sample concentration), while others use such instrumentation as spectrophotometers or proprietary analytical detectors to produce more precise results than can be obtained by using color charts. Common accessories include graduated cylinders, pipettes, balances, extraction apparatus, and timers.

The <u>Hanby Field Test Kit</u> comes in a carrying case that contains all the materials needed to perform an analysis. The Hanby Field Test Kit consists of glassware, an electronic balance, reagents for 15 tests, video and written instructions, and all other components necessary for the 15 analyses. Eleven calibration photographs of more common substances (fuels, solvents, transformer oils, used motor oil, and others) are included in the kit. Additional calibration photographs can be obtained from the vendor.

The <u>Clor-N-Oil and Clor-N-Soil</u> kits from Dexsil® consist of two plastic test tubes that contain ampoules of reagent and assorted accessories, such as the pipettes that are necessary for one analysis. A color chart also is included for use in determining the concentration of the target analyte.

The PetroFLAGTM test system from Dexsil, which comes in a carrying case, consists of a hand-held digital analyzer, a portable electronic balance, a timer, two calibration standards (a blank and 1,000 parts per million), and enough reagents to perform 10 tests. The analyzer weighs less than a pound and will analyze as many as to 18,000 sam

weighs less than a pound and will analyze as many as to 18,000 samples before the 9-volt battery must be replaced. Minimal training is required to operate the menu-driven software.

The AccuSensor® kit comes with all materials needed for on-site measurements of THM, PCE,

TCE, or BTEX (according to the test requested). The kit includes reagent caps, sample vials, and calibration check solutions, all in a high-impact plastic carrying case.

The Envirol Quick Test single-measurement system consist of the Envirometer instrument; a volumetric pipette; a small balance; and test kits, which are sold separately as disposable

supplies. Each test kit contains premeasured calibration standards for conducting the initial calibration of the instrument and a calibration verification solution for making periodic checks of the calibration, extraction solvents, and colorimetric reagents for the analysis of five soil samples. The kits also contain an electronic balance for weighing soil samples, a filter medium for extracts, and other items needed for particular tests, such as a solid-phase extraction (SPE) cartridge for concentrating extracted TCE. The prepared sample is placed in a sample curette in a small portable photometer called the Envirometer. The Envirometer produces quantitative results of the analysis on the basis of the calibration curve stored in its memory.

Mode of Operation

Operation of a colorimetric indicator test can be very simple or rather complicated, depending on the particular method and the data quality level needed. Qualitative screening tests generally are simple to run, even for field personnel who have no experience. At the other extreme, some quantitative test kits involve numerous steps in sample preparation and analysis. Nontechnical personnel require some training in the use of the quantitative reagent kits. Because of the potential for interferences, interpretation of the data may require a basic understanding of chemistry.

The operation of indicator tubes is straightforward. The tip of the indicator tube is broken and the tube is inserted into the pump. To collect a sample, a known volume of air is drawn through the tube by pumping the pump a specific number of times, as indicated in the manufacturer's instructions for the specific test. A colored stain will be produced in the tube's reagent layer if the target gas is present. The length of the color stain is proportional to the concentration of the gas; the concentration can be read by a scale printed on the tube. The analysis takes approximately one minute.

Use of a Hanby Field Test Kit to analyze a soil sample involves weighing five grams of soil sample, placing it into a beaker, adding an ampoule of solvent to the soil, and stirring the sample for approximately two minutes to extract the contaminant. The extract then is poured from the beaker into a marked test tube, and the catalyst is added to the test tube. The mixture is shaken for two minutes while the color change develops. The developed color of the precipitate is compared with a calibration photograph to obtain quantitative results. The water test is performed in the same manner, with the exception that a 500-milliliter (ml) water sample is extracted with solvent in a 500 ml separatory funnel, which is included in the water test kit. The procedure takes approximately 10 minutes.

The Dexsil Clor-N-Oil and Clor-N-Soil kits measure the total chlorine in PCB molecules. Several grams of sample are introduced into a vial that contains an ampoule of organic solvent, and the PCBs are extracted from the sample medium with the solvent. The extract is treated with metallic sodium to strip chlorine from the biphenyl compound as chloride ions. An acidic buffer is added to the extract to quench any unreacted sodium and to transfer the chloride ions into the aqueous phase. Finally, chloride ions are measured colorimetrically by an indicator solution that creates a purple or yellow color depending on the presence of chloride ions. The purple color indicates the absence of chloride, and therefore the absence of PCBs, in the sample. A yellow or clear color indicates the presence of chloride, and therefore the presence of PCBs, in the sample. The procedure takes approximately 10 to 15 minutes.

The PetroFLAGTM kit uses a two-point calibration - a blank and a 1,000 parts per million (ppm) standard. The analyzer's software package is used to adjust the calibration mathematically to quantify the particular petroleum fraction of interest. The Petro Flag[™] analysis involves weighing 10 grams of soil by an electronic balance, placing the soil sample in a test tube, adding extraction solvent to the tube, shaking the tube intermittently for four minutes, filtering the extract into a vial that contains development solution, and allowing the solution to react for 10 minutes. The filtration step is important because the analyzer measures the "turbidity" or "optical density" of the final solution. Approximately 25 samples can be analyzed per hour. The vial of developed solution is placed in the colorimeter, and the instrument produces a quantitative reading that reveals the concentration of hydrocarbons in the soil sample.

To operate the AccuSensor®, a water sample is poured into a standard 40-ml volatile organic analysis (VOA) vial with an AccuSensor® cap that has a Teflon membrane. The vial is shaken for 30 seconds to allow volatile compounds to partition into the headspace of the vial and reach equilibrium. The vial is inserted cap-first into the meter, exposing the gas phase in the headspace to the porous Teflon membrane. The volatile analytes in the headspace permeate the membrane and then encounter the reagent. The degree of absorbency is measured and the concentration is displayed in parts per billion (ppb). The concentration in the headspace, diffusion rate of the analyte, and reaction kinetics all are dependent on temperature. The AccuSensor® meter incorporates a thermistor and software that provide automatic temperature compensation within an operating range of 0 to 50 degrees Centigrade. The procedure takes approximately five minutes.

The Envirol Quick Test™ uses a photochemical reaction to produce a color proportional to the concentration of the analyte of interest. A small portable photometer called the Envirometer is used to measure the reaction. Three standards provided with each test kit are used to calibrate the Envirometer. The standard curve for the photochemical reaction is stored electronically in the unit. A calibration verification solution, also provided with each test kit, is used to verify the calibration curve. A soil sample is weighed, extracted with a solvent, and then filtered. The single analyte test system entails using an organic solvent to extract the analytes from soil and employs various combinations of solid phase extraction (SPE), liquid-liquid extraction, and acid-base cleanup techniques to separate the analytes into an organic solvent. The extraction procedure used varies according to the specific test to be performed. Filtration helps to reduce interferences. The sample is placed in the Envirometer and the degree of absorbency of the sample is measured

and converted into a concentration of PCP, trinitrotoluene (TNT), or carcinogenic PAHs. The entire extraction and analysis procedure requires approximately 20 to 30 minutes.

Target Analytes

Test kits are available for almost all classes of environmental contaminants, as well as hundreds of individual compounds. Some kits analyze for general classes of compounds, while others analyze for specific contaminants. Several kits can be used to test for more than one analyte.

Indicator tubes are available commercially for almost 300 gases and vapors (both organic and inorganic), including common industrial gases and solvents.

Reagent kits have been developed for use in analyses for numerous analytes, as well. Typical organic analytes detectable by reagent kits include petroleum hydrocarbons; benzene, toluene, ethylbenzene, and xylenes (BTEX); polychlorinated biphenyls (PCB); polynuclear aromatic hydrocarbons (PAH); trihalomethanes; and nitroaromatics (explosives such as trinitrolotoluene [TNT]). Some specific examples are:

- The Hanby test kits provide analytical results for petroleum fuels and constituents, such as gasoline, diesel fuel, jet fuel, crude oil, motor oil, BTEX, and PAH, as well as PCBs in soil and water samples.
- The Clor-N-Oil and Clor-N-Soil kits are capable of detecting PCBs in oil, soil, or surface wipe samples.
- The PetroFLAG™ kit detects and provides quantitative results for gasoline, diesel fuel, jet fuel, fuel oil, motor oil, transformer oil, hydraulic fluid, greases, and many other types of hydrocarbons in soil.
- The AccuSensor® can identify the presence of TCE and total THM (chloroform, bromodichloromethane, chlorodibromomethane, and bromoform) in equivalent chloroform in water. Tests for detecting BTEX and PCE also are available.
- The Envirol Quick Test™ provides quantitative results that identify PCP in soil and water, TNT in soil, and carcinogenic PAHs in soil.

Performance Specs

Performance specs include information on interferences, detection limits, calibration, sample preparation, quality control, and precision and accuracy.

Interferences

Interferences can affect the detection and quantification of analytes in a sample. Some interferences can be inherent in the method of analysis. Other interferences may be inherent in the sample matrix. To produce useful data, it is important that the analyst understand the types of interferences and their effects on the results of analysis. Some of the effects are described below.

High relative humidity (higher than 90 percent) may interfere with the results of some tests by indicator tubes. Other interferences may be inherent in the sample matrix and will vary according to the particular test and manufacturer. Manufacturers list specific interferences in their instructions.

If more than one type of aromatic compound is present, interpretation of results obtained by the Hanby test kit may be inaccurate because of interference from other petroleum hydrocarbons. The Hanby test is not capable of distinguishing different hydrocarbon fractions in a complex mixture.

Clor-N-Oil and Clor-N-Soil kits may produce false positives or biased-high results because of the presence of other chlorinated organics, since the two tests measure total concentrations of chlorine. It is important to know whether other chlorinated compounds are likely to be present before the test kits are used. Inorganic chloride salts present in road salt or seawater may produce false positive results or biased high results, as well.

The PetroFLAG™ may produce false positive results if naturally occurring waxes and oils, such as vegetable oils, are present in the sample. PetroFLAG™ analyzes for total petroleum hydrocarbons with the results mathematically corrected to estimate the particular fraction present in the sample. Quantitation of individual petroleum products with PetroFLAGÄ is possible only when the types of hydrocarbons to be analyzed for are known.

Chloroform interferes with measurements of TCE when the AccuSensor[®] is used. Such interference can cause an error of 40 percent when chloroform is present at a concentration equal to that of TCE. There also is a potential for cross interference between readings of TCE and THMs.

The Envirol Quick Test has shown no interferences from creosote, fuel oil, or PCBs for the PCP test. The presence of triand tetrachlorophenols can result in positive interference for PCP. Creosote has been shown to interfere with the test for carcinogenic PAHs at a concentration of 5 ppm. For the TNT test, most explosives showed no interference at levels of 500 ppm. At a concentration of 50 ppm, tetryl will interfere with the TNT test. n e e

Most indicator tubes have detection limits in the range of ppms. A few can detect compounds in the range of hundreds of ppbs.

The Hanby test kit typically achieves detection limits of 1.0 milligram per kilogram (mg/kg) for soil and 0.10 milligram per liter (mg/L) for water. The typical range of the test is 1.0 to 1,000 mg/kg for soil and 0.10 to 20 mg/L for water.

Clor-N-Oil kits are available at concentrations of 20, 50, 100, or 500 ppm Aroclor 1242. Clor-N-Soil kits are available at a concentration of 50 ppm Aroclor 1242. The kits are prepared for those specific concentrations because those levels are common regulatory thresholds.

The PetroFLAG™ test kit will detect hydrocarbons at concentrations in the range of 20 to 2,000 ppm. Higher concentrations can be measured by diluting the sample or using a sample of a smaller size. The PetroFLAG™ system exhibits a lower detection limit of about 20 ppm for heavier hydrocarbons, such as oil and grease. The detection limit for light fuels is higher--for example, 200 ppm for jet fuel and 400 ppm for weathered gasoline.

The AccuSensor® can identify the presence of TCE in water samples at a detection limit of 5 ppb. It measures total THMs (as equivalent chloroform) in water, with a minimum detection limit of 10 ppb.

The range of the Envirol Quick Test is 1.5 to 90 ppm for PCP in soil and water; 3 to 100 ppm for TNT in soil; and 1 to 3,000 ppm for carcinogenic PAHs in soil.

Calibration

There is no calibration involved in the use of colorimetric indicator tubes. The tubes are designed to produce an acceptable result if the appropriate volume of air is drawn through them, as required for each specific test.

The Clor-N-Soil and Clor-N-Oil kits are prepared carefully with premeasured solvents and reagents to produce results of a known quality. Kits can be purchased for several different "threshold" concentrations that trigger regulatory requirements.

Calibration standards provided with the unit are used to perform a two-point calibration for the PetroFLAGTM . A blank and a 1,000 ppm standard are run by the analyzer unit to create an internal <u>calibration curve</u>.

Standards included with the test kit are used to calibrate the AccuSensor[®]. The calibration information is stored internally in the unit. Check samples also are included so that calibration checks can be performed periodically while the unit is in use.

The Environmeter analyzer unit is included with the Envirol Quick $\mathsf{Test}^\mathsf{TM}$ kits. Three standards provided with each test kit are used to calibrate the Environmeter. A continuing calibration verification solution, also provided with each test kit, is used to verify the calibration curve.

Sample Preparation

Indicator tubes are designed to collect ambient air or soil-gas samples. No sample preparation is necessary, other than possibly opening a small boring in the soil to allow screening of a soil-gas sample.

Hanby Field Test Kits are designed for both soil and water analysis. Analysis of a soil sample requires an extraction procedure. The water test is performed by adding an extractant to a 500 ml water sample and pouring the sample through a separatory funnel, which is provided with the water test kit.

All Clor-N-Oil and Clor-N-Soil samples undergo an extraction stage during analysis.

Analysis of soil samples with the PetroFLAG™ kit requires an extraction step, a four-minute reaction, filtering, and analysis for "turbidity" or "optical density" of the final solution.

No sample preparation is required to analyze water samples with the AccuSensor®.

The Envirol Quick Test single analyte test system entails the use of an organic solvent to extract the analytes from soil and employs various combinations of solid-phase extraction (SPE), liquid-liquid extraction, and acid-base cleanup techniques to separate the analytes into an organic solvent. The extraction procedure used varies according to the specific test to be performed. Filtration helps to reduce interference.

Quality Control

Ensuring that the data generated is of a known quality is vital to ensuring the usefulness of those data. Quality control

(QC) measures take several forms. They can be performed in the field, during sample analysis, or after sample data have been collected. The type and extent of QC necessary will vary according to the test to be performed and the data quality objectives of the project. A much higher level of QC is necessary to produce defensible, quantitative data than to produce screening level data. Typical QC measures are discussed below and in the next section, which focuses on precision and accuracy.

Several of the reagent kits require that calibration standards be analyzed before analysis begins. When several standards of known concentration are analyzed, the test kit's relative response at each concentration can be estimated. In that way, the concentrations in samples that fall anywhere within the range can be determined accurately.

Method blanks are "clean" samples of the same matrix as field samples that are taken through all the sample preparation and analysis steps through which the regular samples pass. Method blanks are used to monitor for contaminants inherent in any of the disposable supplies or reagents; for cross contamination; or for contamination caused by any other sources, such as poor decontamination procedures for reusable items. Method blanks can be prepared and run with all the colorimetric indicator test kits described here. Typically, one method blank should be analyzed for every 20 regular samples. The sample should not contain any target analytes at concentrations above the test kit's detection limit. If such concentrations are above the detection limits, the technician should review the instructions supplied with the test kit to verify that all steps were followed properly, and ensure that equipment and supplies used are properly decontaminated.

Duplicate analyses are two analyses performed on the same sample. Duplicates are used to monitor the precision or reproducibility of the analytical technique and should be analyzed at a frequency of one for every 20 regular samples. The variation between the results should be consistent with the data quality objectives of the project or with the recommendations of the manufacturer of the test kit.

Precision and Accuracy

Precision is a measure of the reproducibility of sample data between measurements and is affected by the homogeneity of the sample matrix, consistency of the test kit and the analyst's technique. Accuracy is a measure of how close an analysis comes to the "true" concentration in a sample. There are several means of assessing the precision and accuracy of a colorimetric indicator kit.

Control samples are used to assess the accuracy of the method and kit being used. The samples are solutions of known concentrations often supplied by the manufacturer. They are analyzed with each set of calibration standards before analysis of the regular samples. The concentration in the control sample must fall within a specified range if the method is to be considered accurate. A continuing calibration verification solution is provided with each AccuSensor® test kit for that purpose. Third-party control samples having known concentrations of contaminants can be purchased for use with other reagent kits.

Confirmatory samples are collected from the same matrix that is analyzed on site with the colorimetric indicator kit but are sent to a laboratory off site for formal analysis. The results of the on-site analyses are compared with the results of the analyses by the off-site laboratory. The purpose of the collection of a confirmatory sample is to judge the accuracy of the data resulting from on-site analyses and allow for necessary corrections to be made. One confirmatory sample usually is submitted for every 10 to 20 samples analyzed on site, depending on the extent of the sampling effort.

Many quality control measures can be applied when using colorimetric indicator kits. Duplicate analyses can be performed, using several colorimetric indicator tests to ensure that results are valid. Confirmatory soil and water samples should be collected if it is necessary to provide definitive determination of the concentrations of contaminants at a site. Air samples may be collected in a tedlar bag or other container for formal analysis by an off-site laboratory.

Advantages

The major advantage of colorimetric indicator kits is their ease of use. Nontechnical personnel can use colorimetric indicator test kits with minimal training.

Colorimetric indicator tubes and kits are available for most common classes of contaminants. Colorimetric indicator tubes are available for several hundred compounds.

The portability of colorimetric indicator test kits is also a major advantage. Many do not require batteries or a power source, and others can run on disposable batteries.

Most colorimetric indicator test kits provide rapid results, compared with off-site laboratory analysis. Indicator tubes and semiquantitative test kits can provide results in just a few minutes. Other reagent kits that require sample extraction may take more time. The PetroFLAG™ kit can analyze approximately 25 samples per hour.

Another attractive feature of colorimetric test kits is their price. The use of indicator tubes costs as little as \$3 per sample, while a PetroFLAG™ analysis can be run for \$10 to \$15 per sample. The cost of purchasing an indicator tube pump is approximately \$300 to \$400, while the basic PetroFLAG™ kit can be purchased for only \$700. Most of the nondisposable items, such as photometers and balances, usually can be rented from the vendor or a third party at reasonable rates.

Limitations

Results obtained by indicator tubes are qualitative to semiquantitative at best. The tubes are designed to test ambient air and gas samples and can detect volatile gases emanating from soil and water only indirectly. The tubes have temperature limitations of 0 to 40 degrees Celsius and relative humidity limits typically of 10 percent to 90 percent. Many detector tubes have interferences, which are listed in the instruction sheets.

The limitations of the Hanby Field Test Kit may include inaccurate comparison of color if the sample is dark in color. Further, concentrations may be underestimated for highly refined petroleum fuels (those that are lacking in aromatic compounds). Interpretation of results may be inaccurate because of interference from other petroleum fractions.

The Dexsil Clor-N-Oil and Clor-N-Soil kits also can produce inaccurate color comparison if sample extracts are dark in color. In addition, interferences (false positive results or biased-high results) may occur because of the presence of other chlorinated compounds, such as pesticides or chlorinated solvents. It is important to know whether other chlorinated compounds are present before the test kits are used. Inorganic chloride salts present in road salt or seawater can produce false positive results or biased-high results.

For accurate quantitation with PetroFLAGTM, the analyte to be tested for must be known, so that the instrument can be calibrated correctly. False positive results may occur if naturally occurring waxes and oils, such as vegetable oils, are present in the sample. The manufacturer recommends that the instrument be recalibrated if the ambient temperature varies by $\pm 10^{\circ}$ C from the temperature at the time.

The major interferant for measurements of TCE with the AccuSensor $^{(g)}$ is chloroform, which can cause an error of up to ± 40 percent. Cross-interference also is a possibility between readings of TCE and THMs when the compounds are present at concentrations that are sufficiently high to cause such a problem.

Cost Data

Indicator tube pumps can be rented for approximately \$30 to \$40 per week or purchased for approximately \$300 to \$400. The indicator tubes normally are sold in quantities of 10 per box at \$35 to \$75 per box.

The PetroFLAG™ system costs approximately \$700, with replacement reagents costing from \$10 to \$15 per test.

Hanby test kits can be purchased from the vendor for approximately \$250 for 15 tests, or a cost of approximately \$17 per test.

AccuSensor® caps cost approximately \$35 each, purchased from the vendor.

The Envirol Quick Test costs about \$200 for five tests, or a cost of \$40 per test.

Colorimetric indicator test kits costs vary significantly. Kit content, instrument design and accessories affect test kit prices. Manufacturers listed below should be contacted directly for cost information.

Microsoft OLE DB Provider for ODBC Drivers error '80040e14'

[Microsoft][ODBC driver for Oracle][Oracle]ORA-00936: missing expression

/Library/cost.txt, line 17

$\underline{\text{APPENDIX - E}}$ SAMPLING QA/QC WORK PLAN BLANK ADDENDA FORM

OIL PRODUCTION FACILITY ASSESSMENT AND SAMPLING QA/QC WORK PLAN ADDENDUM

ADDENDUM FOR: _____; FPN _____; EPA ID _____

	JISIANA OPA	ARTER 2003 SITE ASSESSMENTS FOR E and Webster Parish Louisiana	
		ared by: nvironment, Inc.	
	USACE T	DACW56-02-G-1001 ask No.: 0003 : 001562.CU03	
Unite	ed States Arm	nred for: y Corps of Engineers a District	
	Арр	provals	
Ecology & Environment, Inc		United States Army (Corps of Engineers
David Beeson Project Manager	Date	Dawn Rice OPA Task Manager,	Date Tulsa District
Jim Dellinger Project Director	Date		

This addendum only covers changes to the original Work Plan. This includes modifications to Sections 1.0 and 4.1, and the addition of figures and tables.

1.0 SITE BACKGROUND

This add	lendum specif	ies sampling activities to b	be conducted at the following fac	cility:
FPN	EPA ID	Facility Name	Operator (Code)	Field
This factorespective		nted on a site location map	p and site sketch provided as Ado	dendums A and B,
4.0	SAMPLING	DESIGN		
4.1	Sampling Des	ign		
The faci	lity contains _	pit(s) andoil-in	mpacted area(s). They are located	d as follows:
soil reco depth gr manual s up to thr using po a given p sedimen water is collected concentr	eater than 2 ferometer	ith hammer attachment. If eet, one of the five cores we probe with hammer attached long a single diagonal tran- de (PVC) pipe, sludge judy aminated area will be compone representative "clean" b water sample also is collusted or absence of petrol he LDNR action level of or	It up to five locations to a depth of the extent of NOW-impacted multiple extracted to a maximum dement and extensions. Each pit asect of each pit to a maximum deges, or other sampling device. A posited by matrix to prepare one clay sample (if the confining lay lected from each area. An additional leum hydrocarbons is questionable one percent (1%).	aterial is observed at a epth of 9 feet using a will be manually cored at epth of 22 feet or refusal aliquots from all cores in representative sludge or ver is not distinct). If onal aliquot may be le or when the

Note: Specific number of samples will be field determined.

	Table 1. Sampling Requirements Summary					
Remedial Unit	Program Area/ Sampling Objective	Matrix	Parameter*	Sample Container (Number total)	Sample Preservation	Sample Holding Time
Pit or Oil- Impacted Areas	Assessment/Threat Determination	Soil/ Sludge	LAC43XIX.129. B.7	1 L WM with Teflon lid (1)	4° C (1)	28 days ⁽¹⁾
	Assessment/Threat Determination	Soil/ Sludge	Oil and Grease	4 oz WM with Teflon lid (1)	4 ^o C ⁽¹⁾	28 days ⁽¹⁾
	Confirm presence of Petroleum and estimate concentration	Soil/ Sludge	Field test	plastic bag (1)	4° C (1)	28 days ⁽¹⁾
	Assessment/Threat Determination	Water	M.7 pH and chlorides COD Oil & Grease TSS Metals	500 ml poly (1) 250 ml glass (1) 1 L glass (1) 500 ml poly (1) 500 ml glass (1)	pH<2 H ₂ SO ₄ pH<2 HCL No Additional	28 days 28 days
AST "slop oil" (E03612)	Assessment/Threat Determination and Disposal Options	Sludge/ Oily solids	Total halogens Total metals BTU BS&W	8 oz WM glass with Teflon lid (2)	4° C	28 days
			RCI TCLP-VOC TCLP-SVOC TCLP-Pest TCLP-Herb	1 L WM glass (1)	4 ^o C	14 days
			Oil & Grease	4 oz WM with Teflon lid (1)	4° C	28 days

^{*} See Section 9.2 for method citations (1) Recommendation - not required by method.

APPENDICES:

A: Site Location Map

B: Site Sketch

OIL PRODUCTION FACILITY ASSESSMENT AND SAMPLING QA/QC WORK PLAN ADDENDUM No. 1 $\,$

ADDENDUM FOR: Trans - Gulf Petroleum Corp. - Varner; FPN E03612; EPA ID 16-E-1003

FIRST QUARTER 2003 SEVENTEEN NORTH LOUISIANA OPA SITE ASSESSMENTS FOR EPA REGION 6 Caddo, DeSoto, Sabine, Red River, and Webster Parish Louisiana

Prepared by: Ecology & Environment, Inc.

USACE Contract: DACW56-02-G-1001 USACE Task No.: 0003 E & E Project No.: 001702.CU03.3612

Prepared for: United States Army Corps of Engineers Tulsa District

Approvals

Ecology & Environment	ment, Inc.	United States A	army Corps of Engineer
David Beeson For Project Manager	Date	Terry Murphree OPA Task Manager, T	Date ulsa District
	4/5/03	G ,	
Jim Dellinger	Date		
Project Director			

OIL PRODUCTION FACILITY ASSESSMENT AND SAMPLING QA/QC WORK PLAN ADDENDUM No. 1

ADDENDUM FOR: Trans - Gulf Petroleum Corp. - Varner; FPN E03612; EPA ID 16-E-1003

FIRST QUARTER 2003 SEVENTEEN NORTH LOUISIANA OPA SITE ASSESSMENTS FOR EPA REGION 6 Caddo, DeSoto, Sabine, Red River, and Webster Parish Louisiana

> Prepared by: Ecology & Environment, Inc.

USACE Contract: DACW56-02-G-1001 USACE Task No.: 0003 E & E Project No.: 001702.CU03.3612

Prepared for: United States Army Corps of Engineers **Tulsa District**

Approvals

Ecology & Environment, Inc.

United States Army Corps of Engineers

David Beeson

Terry Murphree OPA Task Manager, Tulsa District

Jim Dellinger

Project Director

This addendum only covers changes to the original Work Plan. This includes modifications to Sections 1.0 and 4.1, and the addition of figures and tables.

1.0 SITE BACKGROUND

This addendum specifies sampling activities to be conducted at the following facility:

FPN	EPA ID	Facility Name	Operator (Code)	Field
E03612	16-E-1003	Trans - Gulf Petroleum Corp. – Varner	6040	7651

This facility is represented on a site location map and site sketch provided as Addendums A and B, respectively.

4.0 SAMPLING DESIGN

4.1 Sampling Design

Identified facility components include two pits and one oil-impacted area. They are located as follows: a 69 by 34-foot secondary containment, identified as CONT1, is located northwest of the Varner Well No. 001 (SN 152795); LDNR Pit ID 16P419, a 30-foot diameter pit identified as PIT1, is located approximately 30 feet west of Varner Well No. 002 (SN 152863); and LDNR Pit ID 16P418, a 40 by 10-foot pit identified as PIT2, is located southwest of SN 152863.

Each oil-impacted area will be manually cored at up to five locations to a depth of 2 feet using slam bars. If the extent of NOW-impacted material is observed at a depth greater than 2 feet, one of the five cores will be extracted to a maximum depth of 9 feet using a JMC® probe. Each pit will be manually cored at up to three locations along a single diagonal transect to a maximum depth of 22 feet or refusal using polyvinyl chloride (PVC) pipe, or other sampling device. Aliquots from all cores in a given pit or oil-contaminated area will be composited by matrix to prepare one representative sludge or sediment sample and one representative "clean" clay sample (if the confining layer is not distinct). Additional samples may be collected when the presence or absence of petroleum hydrocarbons is questionable, when the concentration is near the LDNR action level of 1 percent or when the oil-impacted soils vary across an area, as discerned visually or by field tests. These samples will be used to delineate clean areas within a suspected area of contamination. If water is present and in a quantity that it might affect disposal logistics or cost, a grab water sample may also be collected from each area.

In addition to these components, the facility has two 210-barrel (bbl), welded steel ASTs, identified as AST1 and AST2, that may have been used by its last operator to store "slop oil" or material that did not originate from the facility wells, and thus cannot be considered non-hazardous oilfield waste (NOW). A representative aliquot of the contents of each AST will be collected using sludge judges, or other sampling device, and composited to prepare one representative waste sample. Seven samples are anticipated to be collected from this facility and will be numbered as follows:

Area	Sample Identifier	<u> Analysis</u>
CONT1 depth 1	16-E-1003-C1-A	Oil & Grease
CONT1 depth 2	16-E-1003-C1-B	Oil & Grease
PIT1 depth 1	16-E-1003-P1-A	LAC43XIX.313
PIT1 depth 2	16-E-1003-P1-B	Oil & Grease
PIT2 depth 1	16-E-1003-P2-A	LAC43XIX.313
PIT2 depth 2	16-E-1003-P2-B	Oil & Grease
AST1 and AST2	16-E-1003-T1-A	Used Oil Specs, Oil & Grease,
		RCRA Characteristics

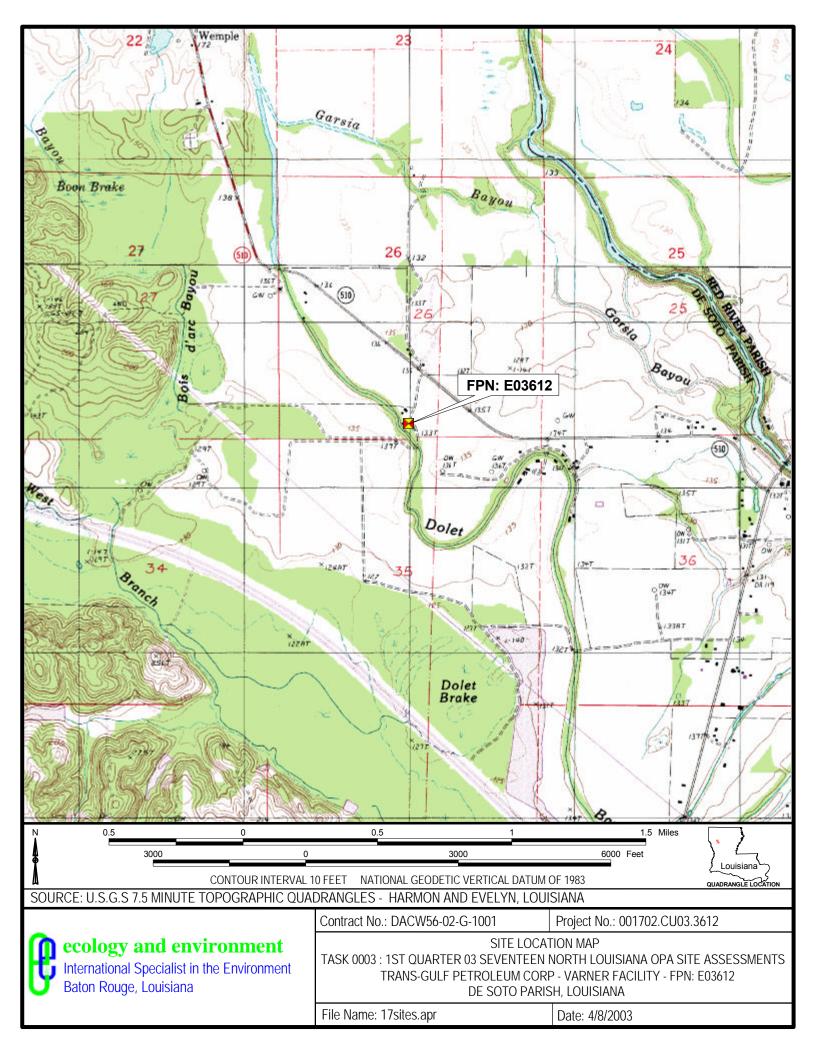
Note: The specific number and location of samples will be field determined based on best professional judgment. Based on the initial site visit one water sample is anticipated.

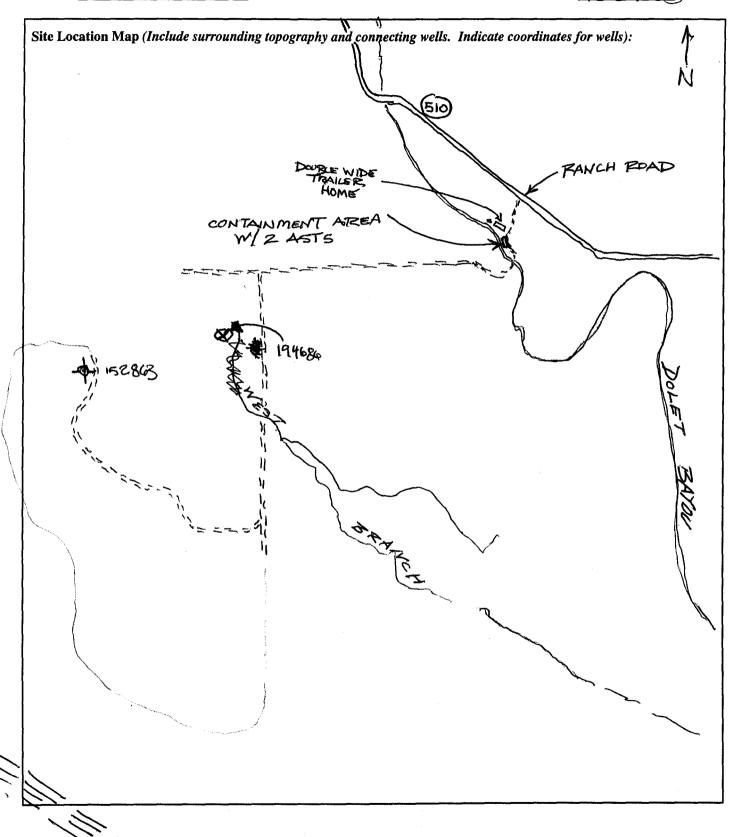
	Table 1. Sampling Requirements Summary					
Remedial Unit	Program Area/ Sampling Objective	Matrix	Parameter*	Sample Container (Number total)	Sample Preservation	Sample Holding Time
Pit or Oil- Impacted Areas	Assessment/Threat Determination	Soil/ Sludge	LAC43XIX.313	1 L WM with Teflon lid (1)	4 ^o C ⁽¹⁾	28 days ⁽¹⁾
	Assessment/Threat Determination	Soil/ Sludge	Oil and Grease	4 oz WM w/Teflon lid (1)	4 ^o C ⁽¹⁾	28 days ⁽¹⁾
	Confirm presence of Petroleum and estimate concentration	Soil/ Sludge	Field test	plastic bag (1)	4 ^o C ⁽¹⁾	28 days ⁽¹⁾
	Assessment/Threat Determination	Water	LAC43XIX. 549.E.2 pH and Cl	500 ml poly (1)	4° C	28 days
			COD	250 ml glass (1)	pH<2 H ₂ SO ₄	28 days
			Oil & Grease	1 L glass (1)	pH<2 HCL	28 days
			TSS	500 ml poly (1)	None	7 days
			Metals	500 ml glass (1)	pH<2 HNO ₃	28 days
AST "slop oil"	Assessment/Threat Determination and Disposal Options	Sludge/ Oily solids	Used Oil Specs (Total halogens Total metals BTU, BS&W)	8 oz WM glass with Teflon lid (2)	4° C	28 days
			RCRA Characteristics (RCI, TCLP-VOC TCLP-SVOC, TCLP-Pest, TCLP- Herb)	1 L WM glass	4º C	14 days
			Oil & Grease	4 oz WM w/Teflon lid (1)	4º C	28 days

APPENDICES:

A: Site Location Map B: Site Sketch

^{*} See Section 9.2 for method citations (1) Recommendation - not required by method.

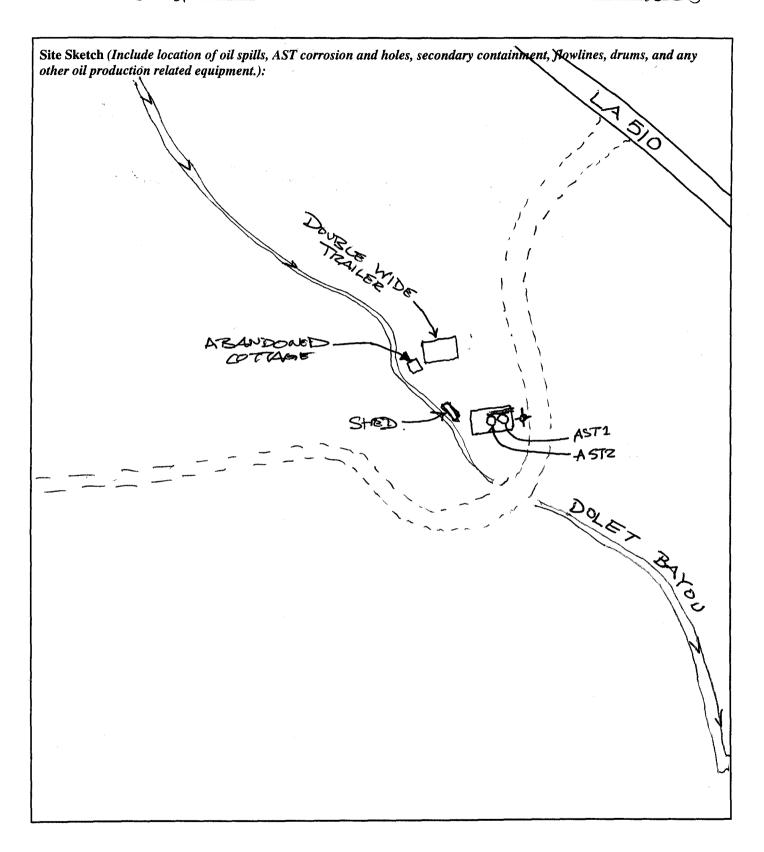




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FPN: E03612

JOP ID: 16-E-1003



EPA No.: 16-E-1003 FPN: E03612

APPENDIX 13

HEALTH AND SAFETY PLAN

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

ecology and environment, inc.

SITE-SPECIFIC HEALTH AND SAFETY PLAN

roject: OPA Site Assessments at 17 Facilities in Northern Louisiana			
ontract No.: DACW56-02-G-1001: Task Order No. 3			
Project No.: 001562.CU03			
Project Location: Caddo, DeSoto, Red River and Webster Parish, Louisiana	· 		
Proposed Date of Field Activities: 02/17/03 - 06/31/03			
Project Director: <u>Jim Dellinger</u>			
Project Manager: David Beeson			
Prepared by: David Beeson	Date Prepared: 02/10/03		
Approved by:	Date Approved: 2-12-03		

1. INTRODUCTION

1.1 POLICY

It is E & E's policy to ensure the health and safety of its employees, the public, and the environment during the performance of work it conducts. This site-specific health and safety plan (SHASP) establishes the procedures and requirements to ensure the health and safety of E & E employees for the above-named project. E & E's overall safety and health program is described in *Corporate Health and Safety Program for Toxic and Hazardous Substances* (CHSP). After reading this plan, applicable E & E employees shall read and sign E & E's Site-Specific Health and Safety Plan Acceptance form.

This SHASP has been developed for the sole use of E & E employees and is not intended for use by firms not participating in E & E's training and health and safety programs. Subcontractors are responsible for developing and providing their own safety plans.

This SHASP has been prepared to meet the following applicable regulatory requirements and guidance:

Applicable Regulation/Guidance
29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER)
USACE Safety and Health Requirements Manual EM-385-1-1

1.2 SCOPE OF WORK

Description of Work: <u>E & E will perform facility assessment at fourteen abandoned oil production facilities including visual inspection of all Aboveground Storage Tanks (ASTs), drums, sumps, pits, lines and wells. Field activities will include, accessing ASTs and other containers found at each facility, gauging for contents, and collection of samples of various phases for remittal to the Louisiana Department of Natural Resources (LDNR) contacted laboratory.</u>

Equipment/Supplies: Attachment 1 contains a checklist of equipment and supplies that will be needed for this work.

The following is a description of each numbered task:

Task Number	Task Description
1	Documentation of site features through photographs and log entries
2	Air monitoring
3	Tank gauging
4	Tank and container sampling
5	Screening for Naturally Occurring Radioactive Material (NORM)
6	Soil sampling
7	Pit sampling (includes use of boat for accessing as required)
8	Boat Operations
9	Hazard categorization (flammability and Total Petroleum Hydrocarbons)

1.3 SITE DESCRIPTION

Site Map: <u>Available site maps or sketches are attached at the end of this plan</u>. For those site where maps or sketches are not yet available, maps will be developed during field investigations.

Site History/Description (see project work plan for detailed description): Sites are abandoned oil production facilities with associated waste runoff/storage pits. Refer to the attached site list for additional information (Attachment 2).

the site currently in operation? $\frac{\text{YES}}{\text{NO}}$						
Locations of Contaminants/Wastes: <u>Drum</u>	Locations of Contaminants/Wastes: <u>Drums, Holds, Aboveground Storage Tanks (ASTs), and runoff/storage pits.</u>					
Types and Characteristics of Contaminants	s/Wastes:					
$\sqrt{}$ Liquid	$\sqrt{\mathrm{Solid}}$	$\sqrt{\text{Sludge}}$	√ Gas/Vapor			
$\sqrt{\text{Flammable/Ignitable}}$	$\sqrt{\text{Volatile}}$	Corrosive	Acutely Toxic			
Explosive	Reactive	■√ Carcinogenic*	Radioactive			
Medical/Pathogenic	\sqrt{NORM} (Naturally	Occurring Radioactive M	aterials)			
Other:						

^{*} Low levels of carcinogen are potentially present naturally in crude oil.

2. ORGANIZATION AND RESPONSIBILITIES

E & E team personnel shall have on-site responsibilities as described in E & E's standard operating procedure (SOP) for Site Entry Procedures (GENTECH 2.2). The project team, including qualified alternates, is identified below.

Name	Site Role/Responsibility	
		-
Paul James	Team Leader/Data Collector	
Patrick Johnson	Safety Officer/Data Collector	
Justin Farrell	Data Collector	
	Data Collector	
	Data Collector	
	Data Collector	

3. TRAINING

Prior to work, E & E team personnel shall have received training as indicated below. As applicable, personnel shall have read the project work plan, sampling and analysis plan, and/or quality assurance project plan prior to project work. All personnel shall be familiar with the USACE Safety and Health Requirements Manual, EM-385-1-1.

Training	Required
40-Hour OSHA HAZWOPER Initial Training and Annual Refresher (29 CFR 1910.120)	X
Annual First Aid/CPR	X
Hazard Communication (29 CFR 1910.1200)	X
40-Hour Radiation Protection Procedures and Investigative Methods	
8-Hour General Radiation Health and Safety	X*
Radiation Refresher	
DOT and Biannual Refresher	X
Other: Review of USACE 385-1-1	X

^{*} Minimum level of training necessary, if NORM detected on site.

4. MEDICAL SURVEILLANCE

4.1 MEDICAL SURVEILLANCE PROGRAM

E & E field personnel shall actively participate in E & E's medical surveillance program as described in the CHSP and shall have received, within the past year, an appropriate physical examination and health rating.

E & E's health and safety record (HSR) form will be maintained on site by each E & E employee for the duration of his or her work. E & E employees should inform the site safety officer (SSO) of any allergies, medical conditions, or similar situations that are relevant to the safe conduct of the work to which this SHASP applies.

Is there a concern for radiation at the site? $\sqrt{\text{Yes (Low potential for presence of Naturally Occurring Radioactive Materials.)}}$ If no, go to 5.1.

4.2 RADIATION EXPOSURE

4.2.1 External Dosimetry

Thermoluminescent Dosimeter (T	LD) Badges: TLD badges a	are to be worn by all E & E field personnel on certain required sites.
Pocket Dosimeters: Not required		
Other:		
4.2.2 Internal Dosimetry		
Whole body count	Bioassay	Other
Requirements: Not required		
4.2.3 Radiation Dose		
Dose Limits: E & E's radiation de	ose limits are stated in the CI	HSP. Implementation of these dose limits may be designated on a site-
specific basis.		
Site-Specific Dose Limits:		
ALARA Policy: Radiation doses	to E & E personnel shall be	maintained as low as reasonably achievable (ALARA), taking into
<u>-</u>	•	nomics of improvements in dose reduction with respect to overall health
and safety, and other societal and	socioeconomic consideration	ns.

4.2.4 Radiation Surveying and Monitoring

Trained personnel will monitor for radiation using micro R meters capable of detecting between 1 and 500 microRoentgens per hour $(\mu R/hr)$. As part of the work scope (Task 5), personnel will monitor potential oil storage, transporting, or processing equipment for NORM. Monitoring will be conducted within 2 inches of equipment, covering at least 10% of the area of interest. In addition to the NORM screening to be performed for Task 5, radiation safety monitoring should be performed of any areas where radioactive materials are suspected. If ambient radiation greater than approximately 50 $\mu R/hour$ is consistently detected in work areas, and/or radiation significantly above background levels (i.e., greater than approximately 2 to 3 times background) is detected, then radiation training and additional protective procedures (such as contamination monitoring for personnel) will be required to continue work. In that case, this safety plan will be amended.

5. SITE CONTROL

5.1 SITE LAYOUT AND WORK ZONES

Site Work Zones: Refer to the maps or site sketches, attached at the end of this plan as available, for designated work zones.

Site Access Requirements and Special Considerations: Site Access: Access will be accomplished through site access agreements or under the authority of a LDNR representative or verbal permission from the landowner. Special Consideration: Sampling of pits may require access to centers of pits. Some pits may be accessible by laying plywood or other material on surface to allow sampler to walk on surface of pit. Pit sludges rarely support the weight of a sampler. For those pits that are found to contain an accumulation of water, access to the center of pits by boat may be necessary. A small flat boat (jon boat) will be employed to access pit with the boat being propelled to the sampling location by pole and a rope being attached to one end of the boat that will be strung to the shore for egress in case the pole is lost or the sampler(s) are unable to remove themselves from the pit. Personal floatation devices will be worn by all team members in the boat. Support personnel and/or the transport vehicle will be utilized for emergency egress. For ASTs, rusty and/or corroded decks as well as corroded stairwells may exist.

Illumination Requirements: Work will be performed during daylight hours only.

Sanitary Facilities (e.g., toilet, shower, and potable water): <u>Nearby public facilities</u>. The exact location of the facilities will be determined in the field. Water will be provided on-site for drinking and decontamination procedures.

On-Site Communications: Verbal and hand signals. Off-site communications are provided through a cellular phone

Other Site-Control Requirements: None known at this time - to be determined during initial site visits.

5.2 SAFE WORK PRACTICES

Daily Safety Meeting: A daily safety meeting will be conducted for all E & E personnel and documented on the Daily Safety

Meeting Record form or in the field logbook. The information and data obtained from applicable site characterization

and analysis will be addressed in the safety meetings and also used to update this SHASP, as necessary.

Work Limitations: Work shall be limited to a maximum of 12 hours per day. If 12 consecutive days are worked, at least one day off shall be provided before work is resumed. Work will be conducted in daylight hours unless prior approval is obtained and the illumination requirements in 29 CFR 1910.120(m) are satisfied.

Weather Limitations: Work shall not be conducted during electrical storms. Work conducted in other inclement weather (e.g., rain, snow) will be approved by site H&S officer and the regional safety coordinator or designee.

Other Work Limitations: Daylight hours only. Work will proceed at the discretion of the site H&S officer during inclement weather.

Buddy System: Fieldwork will be conducted in pairs of team members according to the buddy system.

Line of Sight: Each field team member shall remain in the line of sight and within verbal communication of at least one other team member.

Eating, Drinking, and Smoking: <u>Eating, drinking, smoking, and the use of tobacco products shall be prohibited in the exclusion and contamination reduction areas, at a minimum, and shall only be permitted in designated areas.</u>

Contamination Avoidance: Field personnel shall avoid unnecessary contamination of personnel, equipment, and materials to the					
extent practicable.					
Sample Handling: Protective gloves of a type designated in Section 7 will be worn when containerized samples are handled for					
labeling, packaging, transportation, and other purposes.					
Vermiculite Handling: Vermiculite will no longer be used as sample packaging material					
to package samples into shipping containers (some vermiculite contains low concentrations of asbestos).					
Other Safe Work Practices: None identified.					

6. HAZARD EVALUATION AND CONTROL

6.1 PHYSICAL HAZARD EVALUATION AND CONTROL

Potential physical hazards and their applicable control measures are described in the following table for each task.

Hazard	Task Number	Hazard Control Measures			
Biological (flora, fauna, etc.)	1-7	Potential hazard: snakes, alligators, mosquitoes, raccoons, spider, and wasps Avoid contact. Use mosquito spray and wasp/spider spray as needed.			
		Establish site-specific procedures for working around identified hazards.			
		Other: Chiggers and ticks possible. Inspect daily after showering.			
Cold Stress	1-9	Provide warm break area and adequate breaks.			
		Provide warm non-caffeinated beverages.			
		Promote cold stress awareness.			
		See <i>Cold Stress Prevention and Treatment</i> (attached at the end of this plan if cold stress is a potential hazard).			
Compressed Gas Cylinders	3, 4, and 7	Use caution when moving or storing cylinders.			
	Mobilization	A cylinder is a projectile hazard if it is damaged or its neck is broken.			
		Store cylinders upright and secure them by chains or other means.			
		Other:			
Confined Space	N/A	Ensure compliance with 29 CFR 1910.146.			
		See SOP for Confined Space Entry. Additional documentation is required.			
		Other: No confined spaces will be entered.			
Drilling	6, 7	See SOP for Health and Safety on Drilling Rig Operations. Additional documentation may be required.			
		Landfill caps will not be penetrated without prior discussions with corporate health and safety staff.			
		Other:			
Drums and Containers	1, 2, and 4	Ensure compliance with 29 CFR 1910.120(j).			
		Consider unlabeled drums or containers to contain hazardous substances and handle accordingly until the contents are identified.			
		Inspect drums or containers and assure integrity prior to handling.			
		Move drums or containers only as necessary; use caution and warn nearby personnel of potential hazards.			
		Open, sample, and/or move drums or containers in accordance with established procedures; use approved drum/container-handling equipment.			
		Other:			
Electrical	No facility	Ensure compliance with 29 CFR 1910 Subparts J and S.			
	electrical systems will be handled.	Locate and mark energized lines.			
		De-energize lines as necessary.			
		Ground all electrical circuits.			
		Guard or isolate temporary wiring to prevent accidental contact.			
		Evaluate potential areas of high moisture or standing water and define special electrical needs.			
		Other:			

Excavation and Trenching	N/A	Ensure that excavations comply with and personnel are informed of the requirements of 29 CFR 1926 Subpart P.			
		Ensure that any required sloping or shoring systems are approved as per 29 CFR 1926 Subpart P.			
		Identify special personal protective equipment (PPE) (see Section 7) and monitoring (see Section 8) needs if personnel are required to enter approved excavated areas or trenches.			
		Maintain line of sight between equipment operators and personnel in excavations/trenches. Such personnel are prohibited from working in close proximity to operating machinery.			
		Suspend or shut down operations at signs of cave in, excessive water, defective shoring, changing weather, or unacceptable monitoring results.			
		Other:			
Fire and Explosion	3, 4, 7, 8, 9	Inform personnel of the location(s) of potential fire/explosion hazards.			
	3, 4, 7, 6, 7	Establish site-specific procedures for working around flammables.			
		Ensure that appropriate fire suppression equipment and systems are available and in			
		good working order.			
		Define requirements for intrinsically safe equipment.			
		Identify special monitoring needs (see Section 8).			
		Remove ignition sources from flammable atmospheres.			
		Coordinate with local fire-fighting groups regarding potential fire/explosion situations.			
		Establish contingency plans and review daily with team members.			
		Keep ignition source away from petroleum reagent.			
		Other:			
Heat Stress	1 - 9	Provide cool break area and adequate breaks.			
		Provide cool non-caffeinated beverages.			
		Promote heat stress awareness.			
		Use active cooling devices (e.g., cooling vests) where specified.			
		See <i>Heat Stress Prevention and Treatment</i> (attached at the end of this plan if heat stress is a potential hazard).			
Heavy Equipment Operation		Define equipment routes, traffic patterns, and site-specific safety measures.			
	6, 7	Ensure that operators are properly trained and equipment has been properly inspected and maintained. Verify back-up alarms.			
		Ensure that ground spotters are assigned and informed of proper hand signals and communication protocols.			
		Identify special PPE (Section 7) and monitoring (Section 8) needs.			
		Ensure that field personnel do not work in close proximity to operating equipment.			
		Ensure that lifting capacities, load limits, etc., are not exceeded.			
		Other:			
Heights (Scaffolding, Ladders, etc.)	2, 3, and 4	Ensure compliance with applicable subparts of 29 CFR 1910.			
		Identify special PPE needs (e.g., lanyards, safety nets, etc.)			
		Other: Use safety harnesses and lanyards when access is not attached to tank, has no railing or is damaged. Secure harness to mouth of ASTs not railing.			
Noise	N/A	Establish noise level standards for on-site equipment/operations.			
		Inform personnel of hearing protection requirements (Section 7).			
		Define site-specific requirements for noise monitoring (Section 8).			
		Other: Wear earplugs if necessary			

Overhead Obstructions	1 - 5	Wear hard hat.			
		Other:			
Power Tools N/A		Ensure compliance with 29 CFR 1910 Subpart P.			
		Other:			
Sunburn	1 - 8	Apply sunscreen.			
		Wear hats/caps and long sleeves.			
		Other:			
Utility Lines	2, 3, and 4	Identify/locate existing utilities prior to work.			
		Ensure that overhead utility lines are at least 25 feet away from project activities.			
		Contact utilities to confirm locations, as necessary.			
		Other:			
Weather Extremes	1 - 8	Potential hazards: Thunderstorms			
		Establish site-specific contingencies for severe weather situations.			
		Provide for frequent weather broadcasts.			
		Weatherize safety gear, as necessary (e.g., ensure eye wash units cannot freeze, etc.).			
		Identify special PPE (Section 7) needs.			
		Discontinue work during severe weather.			
		Other:			
Other: Hazard Categorization	9	Limit number of sample containers open and combustible debris present at any one time so as to minimize the chance of uncontrollable fire. (Testing uses open flame) Keep solvents away from open flame.			
		Conduct in well ventilated area. (Limited quantities of sample will be used for each test).			
Other: Boat Operation 8		Be aware of potential changes in weather.			

6.2 CHEMICAL HAZARD EVALUATION AND CONTROL

6.2.1 Chemical Hazard Evaluation

The Task No. in Table 6-1 describes potential chemical hazards. Some chemical hazards presented are associated with the use of the E & E Hazard Classification Kit - not all chemicals listed will necessarily be employed. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Table 6-1
CHEMICAL HAZARD EVALUATION

		Exposure Limits (TWA)						FID/I	PID	
Task Number	Compound	PEL	REL	TLV	Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/ Description	Relative Response	Ioniz. Poten. (eV)
1 – 7, 9	Crude Oil	N/A	N/A	N/A	Y	Inhale, ingest, dermal (Possibly Flammable Liquid)	Irritation to eyes and skin	Unk./ Offensive	Unk.	Unk.
1 – 7, 9	H ₂ S	20 ppm	10 ppm ceiling	10 ppm	N	Inhale (can be entrained in Crude Oil - Flammable Gas)	Loss of smell, unconsciousness and death	0.0047 ppm/Rotten egg smell	Will use H ₂ S monitor	10.50
9	Liquid Propane	1000 ppm	1000 ppm	2500 ppm	N	Inhale (Flammable Gas)	Dizziness, asphyxiation and frostbite	5,000-20,000 ppm	Unk.	10.95
9	Hexane	500 ppm	100 ppm	50 ppm	Y	Inhale, ingest, dermal (Flammable Liquid)	Irritation to eyes and skin	Unk./ Solvent	Unk.	10.18
9	Acetic Acid	10 ppm	10 ppm	10 ppm	Y	Inhale, ingest, dermal (Corrosive Liquid)	Irritation to eyes and skin	Unk./ Vinegar smell	Unk.	10.66
9	Metallic Sodium	N/A	N/A	N/A	Y (water)	Ingest, dermal (Water Reactive)	Reacts violently with exposure to water - laceration hazard	None	None	None
9	Acetone	1000 ppm	250 ppm	500 ppm	Y	Ingest, Inhale, Dermal Flammable liquid	Dizziness, loss of consciousness	Fingernail Polish Remover	0.59 PID 1.24 FID	10.6
9	Methanol	200 ppm	200 ppm	200 ppm	Y	Ingest, Inhale, Dermal, Flammable liquid	Dizziness, loss of consciousness	Alcohol	0.19 PID 0.27 FID	11.8

Note: (HAZARD CLASSIFICATION KIT CHEMICAL): Liquid Propane data as Liquid Petroleum Gas that is found in the propane torch used to test flammability. Hexane used to test for organic solubility. Acetic Acid used in sulfides test. Metallic Sodium present in Chlor-N-Oil test kit as a intermediate reaction reagent (it is encapsulated in a glass ampoule within the kit for safety/shipping concerns - see kit instructions for further detail).

Note: Use an asterisk (*) to indicate known or suspected carcinogens.

6.2.2 Chemical Hazard Control

An appropriate combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below published exposure levels (see Section 6.2.1).

Applicable Engineering/Administrative Control Measures: <u>Use of SCBA or APR</u>, as appropriate, in situations (<u>Tasks 3 4</u>) where direct exposure to chemical wastes is likely, containers are not passively vented, or air monitoring readings are above action levels (<u>See Table 8-1</u>). Use SCBA or APR, as appropriate, in situations (<u>Tasks 7</u>) where direct exposure to chemical wastes are likely, and air monitoring readings of agitated pit contents are above action levels (<u>See Table 8-1</u>). Use APR in situations (<u>Tasks 8</u>) where previous air monitoring readings of the sample material were elevated above background.

PPE: See Section 7.

6.3 RADIOLOGICAL HAZARD EVALUATION AND CONTROL

6.3.1 Radiological Hazard Evaluation

Potential radiological hazards are described below by task number. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Task Number	Radionuclide	DAC (μCi/ml)	Route(s) of Exposure	Major Radiation(s)	Energy(s) (MeV)	Half-Life
5 (1 - 8, if	Radium-226	3 E ⁻¹⁰ μCi/mL	All	Alpha	4.7544 MeV 4.602 MeV	1620 years
Discovered)				Gamma	0.186 MeV	
	Uranium and daughter products other than Radium-	Various; depends on daughter	All	Alpha, beta, and/or gamma, depending on daughter	Various; depends on daughter	Various; depends on daughter

6.3.2 Radiological Hazard Control

Engineering/administrative controls and work practices shall be instituted to reduce and maintain employee exposures to a level at or below the permissible exposure/dose limits (see sections 4.2.3 and 6.3.1). Whenever engineering/administrative controls and work practices are not feasible or effective, any reasonable combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below permissible exposure/dose limits.

Applicable Engineering/Administrative Control Measures: Areas containing oil storage, transporting, or processing equipment will be monitored as discussed in Section 4.2.4 Areas with readings \geq 50 μ R/hr will be considered NORM and must be addressed with caution by trained personnel. If these areas are identified, this plan will be amended to address this issue.

PPE: See Section 7.

7. LEVEL OF PROTECTION AND PERSONAL PROTECTIVE EQUIPMENT

7.1 LEVEL OF PROTECTION

The following levels of protection (LOPs) have been selected for each work task based on an evaluation of the potential or known hazards, the routes of potential hazard, and the performance specifications of the PPE. On-site monitoring results and other information obtained from on-site activities will be used to modify these LOPs and the PPE, as necessary, to ensure sufficient personnel protection. The authorized LOP and PPE shall only be changed with the approval of the regional safety coordinator or designee. Level A is not included below because Level A activities, which are performed infrequently, will require special planning and addenda to this SHASP.

Task Number	В	C	D	Modifications Allowed And Cautions To Note
1			X	Do not disturb containers. Be prepared to egress if conditions warrant.
2	(X) Containers	(X) Containers, Pits and Soil	X Containers, Pits and Soil	Will upgrade based on air monitoring if containers are not passively vented until conditions change.
3	(X)	(X)	X	Will upgrade, based on air monitoring if containers are not passively vented. Be prepared for up-grade if conditions change with pulling of samples from below waste surface (within tank).
4*	(X)	(X)	X	May upgrade if containers are not passively vented or air monitoring indicates upgrade. Be prepared for up-grade if conditions change with pulling of samples from below waste surface (within drum).
5			X	Do not disturb containers. Be prepared to egress if conditions warrant.
6		(X)	X	Will upgrade if visible chemical hazards and air monitoring supports action. Be prepared for up-grade if conditions change with pulling of cores from below surface grade.
7**	(X)	(X)	X	Will upgrade if visible chemical hazards and air monitoring supports action. Be prepared for up-grade if conditions change with pulling of cores from below surface grade.
8			X	Life jackets will be available for all team members.
9		(X)	X	Will upgrade if previous elevated air monitoring readings were noted during sample collection. Technician needs to be familiar with procedure and safety issues.

Note: Use "X" for initial levels of protection. Use "(X)" to indicate levels of protection that may be used as site conditions warrant.

^{*} If contents of the containers is unknown and the container is not passively vented (open to the atmosphere) it will be managed in Level B PPE, until air monitoring is completed or the contents are identified. Otherwise containers will initially be approached with air monitoring equipment and monitoring will be conducted at the vent prior to determining the level of PPE required to access the contain, gauge contents or collect a sample. This project addresses waste associated with oil exploration and production only. Materials suspected to be CERCLA-regulated will not be handled.

** Task 7 is composed on two separate phases: sample collection and sample processing. Sample collection will involve work possibly in a boat over open water. Prior to collecting sampling the pits will be air monitored, agitated and air monitored again. The level of PPE used for sampling will be based on these results. During the sample-processing phase, sample-coring sleeves will be opened with a hacksaw prior to segregating sample phases into sample jars. This action will occur at the pit edge on solid ground. During processing of samples, air monitoring may necessitate an up-grade to level C or to level B. If air monitoring indicates and upgrade to level B, one of two actions will occur. First, if SCBA equipment is not present, crews will cease work, egressing from the location for a few minutes to allow vapor concentrations to reduce. Upon reduction of vapors, processing can continue. If SCBA are, SCBA will be donned and samples processed.

7.2 PERSONAL PROTECTIVE EQUIPMENT

The PPE selected for each task is indicated below. E & E's PPE program complies with 29 CFR 1910.120 and 29 CFR 1910 Subpart I and is described in detail in the CHSP. Refer to 29 CFR 1910 for the minimum PPE required for each LOP.

			T	ask Nu	mber/L	OP		
PPE	1	2	3&4	9	5	6	7	8
Full-face APR (If only hazard is H ₂ S concentrations less than 4ppm)		(X)	(X)			(X)	(X)	(X)
PAPR								T
Cartridges:								
Н								
GMC-H, GMC-P100								
GME-H, GME-P100 (only at H ₂ S concentrations less than 4ppm)		(X)	(X)			(X)	(X)	(X)
Other:								
Positive-pressure, full-face SCBA (if up-grade is required)		(X)	(X)				(X)	
Spare air tanks (Grade D air)		(X)	(X)				(X)	
Positive-pressure, full-face, supplied-air system								
Cascade system (Grade D air)								
Manifold system								
5-Minute escape mask								
Safety glasses	X				X			
Monogoggles								
Coveralls/clothing	X	X	X	X	X	X	X	X
Protective clothing:			1		1	ı		
Tyvek			X			(X)	X	(X)
Saranex			(X)				(X)	
Other:								
Splash apron								
Inner gloves:								
Cotton								

		Task Number/LOP						
PPE	1	2	3&4	9	5	6	7	8
Nitrile								
Latex			(X)	X		X	(X)	X
Other:								
Outer gloves:		T	1	T	T	1	Г	Г
Viton								
Rubber								
Neoprene								
Nitrile			X			(X)	X	(X)
Other:								
Work gloves								
Safety boots (as per ANSI Z41)	X	X	X	X	X	X	X	X
Neoprene safety boots (as per ANSI Z41)								
Boot covers (type: <u>latex</u>)	(X)	(X)	(X)		(X)	(X)	(X)	
Hearing protection (type:)								
Hard hat	X	X	X		X	X	X	X
Face shield								
Other: Life Jacket								X
Other:								

8. HEALTH AND SAFETY MONITORING

Health and safety monitoring will be conducted to ensure proper selection of engineering/administrative controls, work practices, and/or PPE so that employees are not exposed to hazardous substances at levels that exceed permissible exposure/dose limits or published exposure levels. Health and safety monitoring will be conducted using the instruments, frequency, and action levels described in Table -1. Health and safety monitoring instruments shall have been appropriately calibrated and/or performance-checked prior to use.

Table 8-1 HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action I	evels ^a
PID/FID (e.g., TVA)	2 - 4, 5 - 9	Volatile Organics	Tanks, containers, pits and stained soils, BZ	When first assessing site, when gauging tanks and during sampling.	Unknown Vapors Background to 1 ppm: Level D 1 to 5 ppm above background: Level C 5 to 500 ppm above background: Level B >500 ppm above background: Level A	Contaminant-Specific
Oxygen Meter/Explosimeter	1 - 7 standard operating procedure		Tanks, containers, pits and stained soils	When first assessing site, when gauging tanks and during sampling.	Oxygen <19.5% or >22.0%: Evacuate area; eliminate ignition sources; reassess conditions. 19.5 to 22.0%: Continue work in accordance with action levels for other instruments.	Explosivity ≤10% LEL: Continue work in accordance with action levels for other instruments; monitor continuously for combustible atmospheres. >10% LEL: Evacuate area; eliminate ignition sources; reassess conditions.
Radiation Alert Monitor (Rad-mini or RAM-4)	Will not be used					
Mini-Ram Particulate Monitor	Will not be used				General/Unknown	Contaminant-Specific
H ₂ S (Monitox)	1 – 7, 9	H ₂ S gas	Tanks, containers, pits and stained soils, BZ	When first assessing site, when gauging tanks and during sampling.	≥4 ppm: Leave area and consult with SSO. WHILE HAZARD CLASSIFICATION TESTI	NG IS BEING PERFORMED.
Draeger Colorimetric Tubes	Will not be used				Tube Action Level	I Action
Air Monitor/Sampler	Will not be			_	Action Level	Action

Table 8-1 HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels ^a
Type:Sampling medium:	used				
Personal Sampling Pump Type: Sampling medium:	Will not be used				Action Level Action
Micro R Meter	5	NORM	Tanks, containers, piping and areas of visibly stained soils	At areas where scaling could develop or where de- scaling residues might be left.	<50 uR/hr or 2-3 times background: Continue work in accordance with action levels for other instruments. ≥50 uR/hr or 2-3 times background: Evacuate area; reassess work plan and contact radiation safety specialist.
Ion Chamber	Will not be used				
Radiation Screening Ratemeter/Scaler with External Detector(s)	Will not be used				Detector Action Level Action
Noise Dosimeter (Sound Level Meter)	Will not be used				

a Unless stated otherwise, airborne contaminant concentrations are measured as a time-weighted average in the worker's breathing zone. Acceptable concentrations for known airborne contaminants will be determined based on OSHA/NIOSH/ACGIH and/or NRC exposure limits. As a guideline, 1/2 the PEL/REL/TLV, whichever is lower should be used.

9. DECONTAMINATION PROCEDURES

All equipment, materials, and personnel will be evaluated for contamination upon leaving the exclusion area. Equipment and materials will be decontaminated and/or disposed and personnel will be decontaminated, as necessary. Decontamination will be performed in the contamination reduction area or any designated area such that the exposure of uncontaminated employees, equipment, and materials will be minimized. Specific procedures are described below.

10. EMERGENCY RESPONSE

This section contains additional information pertaining to on-site emergency response and does not duplicate pertinent emergency response information contained in earlier sections of this plan (e.g., site layout, monitoring equipment, etc.). Emergency response procedures will be rehearsed regularly, as applicable, during project activities.

10.1 EMERGENCY RESPONSIBILITIES

All Personnel: All personnel shall be alert to the possibility of an on-si	te emergency; report potenti	al or actual emergency situations
to the team leader and SSO; and notify appropriate emergency resource	es, as necessary.	
Team Leader: The team leader will determine the emergency actions to	be performed by E & E per	rsonnel and will direct these
actions. The team leader also will ensure that applicable incidents are r	reported to appropriate E & I	E and client project personnel and
government agencies.		
SSO: The SSO will recommend health/safety and protective measures	appropriate to the emergence	у.
Other:		
10.2 LOCAL AND SITE RESOURCES (including phone numbers))	
Ambulance: 911		
Hospital: 911		
Directions to Hospital: see Attachment 3 for hospital information for th	e 17 facilities to be investiga	ated.
Police Department: 911.		
Fire Department: 911.		
Client Contact: <u>USACE</u>		
Site Contact: N/A Abandoned facility.		
On-Site Telephone Number: None		
Cellular Telephone Number: TBD		
Radios Available: YES - 2		_
Other:		
10.3 E & E EMERGENCY CONTACTS		
E & E Emergency Response Center (24 Hours):	716/684-8940	
Corporate Health and Safety Director, Dr. Paul Jonmaire:	716/684-8060 (office) 716/655-1260 (home)	
Office Contact: Jim Dellinger	225-298-5080 225-642-2038	(office) (home)
Other: Bill Perry	225-673-2599	(office)
a. E & E Emergency Response Center:	716/684-8940	
b. Corporate Health and Safety Director, Dr. Paul Jonmaire:	716/684-8060 (office) 716/655-1260 (home)	
c. Corporate Safety Officer, Tom Siener	716/684-8060 (office)	

716/662-4740 (home)

10.4 OTHER EMERGENCY RESPONSE PROCEDURES

On-Site Evacuation Signal/Alarm (must be audible and perceptible above ambient noise and light levels): Verbal, hand signals, three blasts of
car horn.
On-Site Assembly Area: Next to vehicle.
Emergency Egress Route to Get Off Site: <u>TBD</u> - with the initial site visit
Off-Site Assembly Area: <u>TBD</u> - with the initial site visit.
Preferred Means of Reporting Emergencies: Cellular Phone
Site Security and Control: In an emergency situation, personnel will attempt to secure the affected area and control site access.
Emergency Decontamination Procedures: <u>Dry decon, outer garments, wash any exposed areas, monitor for radiation.</u>
PPE: Personnel will don appropriate PPE when responding to an emergency situation. The SSO and Section 7 of this plan will
provide guidance regarding appropriate PPE.
Emergency Equipment: Appropriate emergency equipment is listed in Attachment 1. Adequate supplies of this equipment shall be
maintained in the support area or other approved work location.
Incident Reporting Procedures: Report to USACE

<u>ATTACHMENT - 1</u> EQUIPMENT/SUPPLY CHECKLIST

No. EMERGENCY EQUIPMENT No. OVA/TVA V First aid kit V V Pornable eye wash Photovac tip Blood pressure monitor Fire blainkel Fire kinguisher Fire kinguisher Fire kinguisher Fire kinguisher Pipe locator Fire blainkel Spill kit V V Pornable eye wash Pipe locator Fire blainkel Fire kinguisher Fire k	ATTACHMENT 1 EQUIPMENT/SUPPLIES CHECKLIST					
Thermal desorber O/explosimeter/ HySCO w/cal. kit Photovac tip Photovac tip HNu (probe: _eV) Passport Magnetometer Pipe locator Weather station Weather station Veather station Parager tube kit (tubes: _) Draeger tube kit (tubes: _) Prospect tube kit (tubes: _) Brunton compass Veather station Prospect tube kit (tubes: _) INSTRUMENTATION	No.	EMERGENCY EQUIPMENT	No.			
O/explosimeter/ H.S/CO w/cal. kit Photovac tip Photovac tip Blood pressure monitor Fire blanket Magnetometer Pipe locator Phype locator Phype locator Presentinguisher Brunton compass Real-time grainde monitor Real-time grainde monitor Real-time H₂S monitor Heat stress monitor Presonal sampling pumps and supplies MiniRam dust monitor Mercury monitor Bauckets (if necessary) Mercury monitor Spare batteries (type: AA) Pressurized sprayer ABADIATION EQUIPMENT/SUPPLIES Rad-4 Solvent (type:) Documentation forms Platic sheeting Protable ratemeter Trash bags 1" Nal gamma probe ZnS alpha probe Duct tape A Paper towels Trash-cans Paper towels Trash-cans Paper towels Trash-cans A Paper towels Trash-cans Paper towels Alert monitor Distilled water A Paper towels A Paper	OVA/TVA	√	First aid kit	√		
Photovace tip	Thermal desorber		Stretcher			
HNu (probe:eV) Passport Fire blanker Magnetometer Fire extinguisher Pipe locator Thermometer (medical) Weather station Spill kit Draeger tube kit (tubes:) Ziploe Baggies √ Brunton compass √ Real-time cyanide monitor Real-time H₂S monitor Heat stress monitor Personal sampling pumps and supplies MiniRam dust monitor Buckets (if necessary) √ Mercury monitor Serub brusbes (if necessary) √ Spary bottle Serub brusbes (if necessary) √ Pressurized sprayer Serub brusbes (if necessary) √ Spary bottle Serub brusbes (if necessary) √ Spary bottle Serub brusbes (if necessary) √ Pressurized sprayer Serub brusbes (if necessary) √ Pressurized sprayer Serub brusbes (if necessary) √ Spary bottle Serub brusbes (if necessary) √ Pressurized sprayer Serub brusbes (if necessary) √ Spary buttle Serub brusbes (if necessary) √ Pressurize	O ₂ /explosimeter/ H ₂ S/CO w/cal. kit	√	Portable eye wash			
Fire extinguisher Fire extinguisher Pipe locator Thermometer (medical) Fire extinguisher Thermometer (medical) Fire extinguisher Thermometer (medical) Fire extinguisher Thermometer (medical) Fire extinguisher Fire extinguisher Thermometer (medical) Fire extinguisher Fire ext	Photovac tip		Blood pressure monitor			
Pipe locator	HNu (probe:eV) Passport		Fire blanket			
Weather station Spill kit √ Draeger tube kit (tubes:	Magnetometer		Fire extinguisher			
Draeger tube kit (tubes:	Pipe locator		Thermometer (medical)			
Branton compass Real-time cyanide monitor Real-time Hys monitor R	Weather station		Spill kit	√		
Real-time H2S monitor Real-time H2S monitor Heat stress monitor Noise equipment Personal sampling pumps and supplies MiniRam dust monitor Mercury monitor Sorub brushes (if necessary) Mercury monitor Buckets (if necessary) Mercury monitor Sorub brushes (if necessary) Mercury monitor Buckets (if necessary) Mercury monitor Detergent (type:) Plastic sheeting Trash bags I arga and poles Trash bags I rash bags I ras	Draeger tube kit (tubes:)		Ziploc Baggies	√		
Real-time H₂S monitor Heat stress monitor Noise equipment Personal sampling pumps and supplies MiniRam dust monitor Mercury monitor Spare batteries (type:AA	Brunton compass	$\sqrt{}$				
Heat stress monitor Noise equipment Personal sampling pumps and supplies MiniRam dust monitor Mercury monitor Sarub brushes (if necessary) Mercury monitor Mercury monitor Sarub brushes (if necessary) Mercury monitor Detergent (type: Deterg	Real-time cyanide monitor					
Noise equipment DECONTAMINATION EQUIPMENT Personal sampling pumps and supplies Wash tubs MiniRam dust monitor Buckets (if necessary) √ Mercury monitor Scrub brushes (if necessary) √ Spare batteries (type:AA	Real-time H ₂ S monitor					
Personal sampling pumps and supplies Wash tubs MiniRam dust monitor Buckets (if necessary) √ Mercury monitor Scrub brushes (if necessary) √ Spare batteries (type: AA) Pressurized sprayer ✓ GPS √ Spray bottle ✓ RADIATION EQUIPMENT/SUPPLIES Detergent (type:						
Personal sampling pumps and supplies Wash tubs MiniRam dust monitor Buckets (if necessary) √ Mercury monitor Scrub brushes (if necessary) √ Spare batteries (type: AA) Pressurized sprayer ✓ GPS √ Spray bottle ✓ RADIATION EQUIPMENT/SUPPLIES Detergent (type:)	Noise equipment		DECONTAMINATION EQUIPMENT			
MiniRam dust monitor Buckets (if necessary) √ Mercury monitor Scrub brushes (if necessary) √ Spare batteries (type:AA						
Mercury monitor Scrub brushes (if necessary) √ Spare batteries (type:AA			Buckets (if necessary)	√		
Spray bottle	Mercury monitor			√		
RADIATION EQUIPMENT/SUPPLIES Rad-4 Solvent (type:) Plastic sheeting Portable ratemeter Tarps and poles Scaler/ratemeter Trash bags Trash bags Trash cans Trash cans Z'' Nal gamma probe Duet tape Masking tape ✓ Masking tape ✓ May tape ✓ Micro R meter Micro R meter Micro R meter Dosimeter charger Radiation decon supplies Spare batteries (type:) MISCELLANEOUS (Cont.) Miscellaneous	Spare batteries (type: AA)		Pressurized sprayer			
Rad-4 Solvent (type:) Documentation forms Plastic sheeting Portable ratemeter Tarps and poles Scaler/ratemeter Trash bags 1" Nal gamma probe Trash cans 2" Nal gamma probe Masking tape ZnS alpha probe Duct tape GM pancake probe Paper towels Tungsten-shielded GM probe Face mask Micro R meter √ Ion chamber Step ladders Alert monitor Distilled water √ Pocket dosimeter Deionized water Dosimeter charger Radiation warning tape Radiation decon supplies Spare batteries (type:D		$\sqrt{}$				
Documentation forms Plastic sheeting Portable ratemeter Tarps and poles Scaler/ratemeter Trash bags 1" Nal gamma probe Trash cans 2" Nal gamma probe Masking tape ZnS alpha probe Duct tape GM pancake probe Paper towels Tungsten-shielded GM probe Face mask Micro R meter √ Ion chamber Step ladders Alert monitor Distilled water √ Pocket dosimeter Deionized water √ Dosimeter charger Page towels Candiation warning tape Candiation decon supplies Spare batteries (type:D) MISCELLANEOUS (Cont.) ✓ 8-oz. bottles Gatorade or equivalent ✓	RADIATION EQUIPMENT/SUPPLIES		Detergent (type:)			
Portable ratemeter Scaler/ratemeter Trash bags Trash bags Trash cans Trash cans Trash cans Trash gape Masking tape Duct tape Paper towels Tungsten-shielded GM probe Face mask Micro R meter Ion chamber Alert monitor Dosimeter charger Radiation warning tape Radiation decon supplies SampLing EQUIPMENT Scaler/ratemeter Trash bags Trash bags Masking tape Paper towels Face mask Step ladders Distilled water Deionized water Deionized water Trash bags asking tape			Solvent (type:)			
Trash bags 1" NaI gamma probe Trash cans Trash can	Documentation forms		Plastic sheeting			
1" Nal gamma probe Trash cans 2" Nal gamma probe Masking tape √ ZnS alpha probe Duct tape √ GM pancake probe Paper towels √ Tungsten-shielded GM probe Face mask Micro R meter √ Face mask sanitizer Ion chamber Step ladders Alert monitor Distilled water √ Pocket dosimeter Deionized water Dosimeter charger Radiation warning tape	Portable ratemeter		Tarps and poles			
2" NaI gamma probe Masking tape √ ZnS alpha probe Duct tape √ GM pancake probe Paper towels √ Tungsten-shielded GM probe Face mask Micro R meter √ Face mask sanitizer Ion chamber Step ladders Alert monitor Distilled water √ Pocket dosimeter Deionized water Dosimeter charger Radiation warning tape	Scaler/ratemeter		Trash bags	√		
ZnS alpha probe Duct tape √ GM pancake probe Paper towels √ Tungsten-shielded GM probe Face mask	1" NaI gamma probe		Trash cans			
GM pancake probe Tungsten-shielded GM probe Face mask Micro R meter Jon chamber Alert monitor Distilled water Dosimeter charger Radiation warning tape Radiation decon supplies Spare batteries (type:D) SAMPLING EQUIPMENT Paper towels Face mask Face mask sanitizer Distilled water √ Deionized water Deionized water MISCELLANEOUS (Cont.) Gatorade or equivalent	2" NaI gamma probe		Masking tape	√		
Tungsten-shielded GM probe Micro R meter Jean Eace mask Micro R meter Step ladders Alert monitor Distilled water Dosimeter charger Radiation warning tape Radiation decon supplies Spare batteries (type:D) SAMPLING EQUIPMENT Seoz. bottles Face mask Face mask Face mask Deionized water Deionized water Miscellaneous (Cont.)	ZnS alpha probe		Duct tape	\checkmark		
Micro R meter √ Face mask sanitizer Ion chamber Step ladders Alert monitor Distilled water √ Pocket dosimeter Deionized water Dosimeter charger Image: Control of the property of t	GM pancake probe		Paper towels	√		
Ion chamber Step ladders Alert monitor Distilled water Pocket dosimeter Deionized water Dosimeter charger Radiation warning tape Radiation decon supplies Spare batteries (type:D) Sampling Equipment MISCELLANEOUS (Cont.) 8-oz. bottles Gatorade or equivalent	Tungsten-shielded GM probe		Face mask			
Alert monitor Pocket dosimeter Dosimeter charger Radiation warning tape Radiation decon supplies Spare batteries (type:D) SAMPLING EQUIPMENT 8-oz. bottles Distilled water Deionized water Deionized water Miscellane Deionized water Miscellane Deionized water Deionized water Miscellane Deionized water Deionized water Miscellane Gatorade or equivalent	Micro R meter	V	Face mask sanitizer			
Pocket dosimeter Deionized water Dosimeter charger Radiation warning tape Radiation decon supplies Spare batteries (type:D) SAMPLING EQUIPMENT MISCELLANEOUS (Cont.) 8-oz. bottles Gatorade or equivalent	Ion chamber		Step ladders			
Dosimeter charger Radiation warning tape Radiation decon supplies Spare batteries (type:D) SAMPLING EQUIPMENT MISCELLANEOUS (Cont.) 8-oz. bottles Gatorade or equivalent	Alert monitor		Distilled water	√		
Radiation warning tape	Pocket dosimeter		Deionized water			
Radiation warning tape	Dosimeter charger					
Radiation decon supplies						
Spare batteries (type:D) SAMPLING EQUIPMENT MISCELLANEOUS (Cont.) 8-oz. bottles Gatorade or equivalent	Radiation decon supplies					
SAMPLING EQUIPMENT MISCELLANEOUS (Cont.) 8-oz. bottles Gatorade or equivalent	Spare batteries (type:D)					
8-oz. bottles Gatorade or equivalent √	SAMPLING EQUIPMENT		MISCELLANEOUS (Cont.)			
Half-gallon bottles Tables	8-oz. bottles					
	Half-gallon bottles		Tables			

	FACHM SUPPLI	ENT 1 IES CHECKLIST	
VOA bottles		Chairs	
String		Weather radio	$\sqrt{}$
Hand bailers		Two-way radios	
Thieving rods with bulbs		Binoculars	
Spoons		Megaphone	
Knives		Cooling vest	
Filter paper			
Bottle labels			
		SHIPPING EQUIPMENT	
MISCELLANEOUS		Coolers	
gauger	$\sqrt{}$	Paint cans with lids, 7 clips each	
Pump		Vermiculite	√
Surveyor's tape	$\sqrt{}$	Shipping labels	$\sqrt{}$
100' Fiberglass tape		DOT labels:	√
300' Nylon rope		"Up"	$\sqrt{}$
Nylon string		"Danger"	
Surveying flags		"Inside Container Complies"	√
Camera	$\sqrt{}$	"Flammable Liquid 3" label	√
Film/Disks	$\sqrt{}$	Strapping tape	$\sqrt{}$
Bung wrench		Baggies	$\sqrt{}$
Soil auger		Custody seals	√
Pick		Chain-of-custody forms	√
Shovel		Federal Express forms	√
Catalytic heater		Clear packing tape	√
Propane gas		Permanent markers	$\sqrt{}$
Banner tape		Petroleum Products N. O. S. UN 1268 using packing group II:	
Surveying meter stick			
Chaining pins and ring			
Logbooks (large,small)			
Required MSDSs			
Intrinsically safe flashlight			
Potable water	\checkmark		

ATTACHMENT – 2

FACILITY LIST

	ATTACHMENT 2 – LIST OF FACILITIES						
FPN	JOP ID	FACILITY NAME					
E03608	09-E-1047	TODD OIL PRODUCTION CO WELLS					
E03609	09-E-1048	JOSEPH C. HAWKINS - DOROUGH					
E03610	09-E-1049	HUSH OIL - HART					
E03611	09-E-1050	TODD OIL PRODUCTION CO - CRYSTAL OIL CO					
E03612	16-E-1003	TRANS-GULF PETROLEUM CORP - VARNER					
E03613	16-E-1004	C & W OPERATING - FARMER C					
E03614	16-E-1005	C & W OPERATING - R LAFFITTE					
E03615	43-E-1001	WESTEK RESOURCES, INC WHITEHURST					
E03616	43-E-1002	WESTEK RESOURCES, INC BASS					
E03617	09-E-1051	TODD OIL PRODUCTION CO - TAYLOR					
E03618	09-E-1052	TODD OIL PRODUCTION CO - TAYLOR A					
E03619	09-E-1053	SMITH RESOURCES (OIL COMPANY) - WASHINGTON					
E03620	09-E-1054	JACKSON WELL SERVICE - SKLAR GAMM					
E03621	09-E-1055	L.P. OPERATING COMPANY - ABNEY					
E03622	60-E-1004	HAROLD H. HOLLENSHEAD - PERKINS					
E03623	41-E-1001	H & B WELL SERVICE, INC DRAKE					
E03624	09-E-1056	BOBBIE J. LANGSTON - H.C. LANGSTON ET AL					

<u>ATTACHMENT – 3</u> HOSPITAL INFORMATION

OPA-17 North LA Hospital Information

Site: 09-E-1047

Hospital: North Caddo Medical Center

1000 S. Spruce Street

PO Box 792 Vivian, LA 71082 318/375-3235

Directions from Site:

1. West on LA-2 to Vivian, LA

- 2. Turn left on S. Pardue St
- 3. Turn right on Camp Rd
- 4. Turn right on S. Pine St
- 5. Turn left on Airport Dr
- 6. Turn right on S. Spruce St

Site: 09-E-1048

Hospital: North Caddo Medical Center

1000 S. Spruce Street

PO Box 792 Vivian, LA 71082 318/375-3235

- 1. Take LA Hwy 1 north towards Vivian
- 2. Continue on S. Pine St
- 3. Turn left on Airport Dr
- 4. Turn right on S. Spruce St

Site: 09-E-1049

Hospital: North Caddo Medical Center

1000 S. Spruce Street

PO Box 792 Vivian, LA 71082 318/375-3235

Directions from Site:

- 1. Take LA Hwy 170 northwest to Vivian, LA.
- 2. Turn left on Camp Rd
- 3. Turn right on S. Pine St
- 4. Turn left on Airport Dr
- 5. Turn right on S. Spruce St

Site: 09-E-1050

Hospital: North Caddo Medical Center

1000 S. Spruce Street

PO Box 792 Vivian, LA 71082 318/375-3235

- 1. Take LA Hwy 1 north to Vivian
- 2. Continue on S. Pine St
- 3. Turn left on Airport Dr
- 4. Turn right on S. Spruce St

Site: 09-E-1051 and 09-E-1052

Hospital: North Caddo Medical Center

1000 S. Spruce Street

PO Box 792 Vivian, LA 71082 318/375-3235

Directions from Site:

- 1. Take LA Hwy 3049 (Dixie Shreveport Rd) north to LA Hwy 169 (Mooringsport Rd).
- 2. Go west on LA Hwy 169.
- 3. North on LA Hwy 1 to Vivian, LA
- 4 Continue on S. Pine St
- 5. Turn left on Airport Dr
- 6. Turn right on S. Spruce St

Site: 09-E-1053

Hospital: North Caddo Medical Center

1000 S. Spruce Street

PO Box 792 Vivian, LA 71082 318/375-3235

- 1. Take LA Hwy 530 west to LA Hwy 1
- 2. North on LA Hwy 1 to Vivian, LA
- 3. Continue on S. Pine St
- 4. Turn left on Airport Dr
- 5. Turn right on S. Spruce St

Site: 09-E-1054

Hospital: North Caddo Medical Center

1000 S. Spruce Street

PO Box 792 Vivian, LA 71082 318/375-3235

Directions from Site:

- 1. Take LA Hwy 530 west to LA Hwy 1
- 2. North on LA Hwy 1 to Vivian, LA
- 3. Continue on S. Pine St
- 4. Turn left on Airport Dr
- 5. Turn right on S. Spruce St

Site: 09-E-1055

Hospital: Willis-Knighton South

2510 Bert Kouns Industrial Loop

Shreveport, LA 71118

318/212-5150

- 1. Take US Hwy 180 southeast to I-20
- 2. Take I-20 east
- 3. Take the I-220 By-Pass East/LA-3132 East exit towards Alexandria, exit #11.
- 4. Merge on LA-3132 East
- 5. Take the Walker Rd exit, exit #3
- 6. Continue on Walker Rd
- 7. Turn left on Bert Kouns Industrial Loop Expy

Site: 09-E-1056

Hospital: North Caddo Medical Center

1000 S. Spruce Street

PO Box 792 Vivian, LA 71082 318/375-3235

Directions from Site:

1. Take LA Hwy 170 northwest to Vivian, LA.

- 2. Turn left on Camp Rd
- 3. Turn right on S. Pine St
- 4. Turn left on Airport Dr
- 5. Turn right on S. Spruce St

Site: 16-E-1003

Hospital: Christus Coushatta Health Care Center

1635 Marvel St

Coushatta, LA 71019

318/932-2000

- 1. Take LA 177 northeast to US-84
- 2. Turn right on US-84
- 3. Turn left on LA 179
- 4. Turn left on Gulf Street
- 5. Turn right on Marvel

Site: 16-E-1004 & 16-E-1005

Hospital: Desoto Regional Health System

301 Jefferson St Mansfield, LA 71052

318/871-1080

Directions from Site:

- 1. Take LA Hwy 509 southwest
- 2. LA Hwy 509 will become Lake Road
- 3. Turn right on MacArthur Dr/Polk St
- 4. Turn left on US 171/84
- 5. Turn left on Gibbs St
- 6. Turn right on Jefferson

Site: 41-E-1001

Hospital: Christus Coushatta Health Care Center

1635 Marvel St

Coushatta, LA 71019

318/932-2000

- 1. Take US Hwy 84 southeast
- 2. Bear left on Ringgold Ave
- 3. Turn left on Front St/Hessmer St
- 4. Continue on Front St
- 5. Turn left on Marvel St

Site: 43-E-1001

Hospital: Desoto Regional Health System

301 Jefferson St Mansfield, LA 71052

318/871-1080

Directions from Site:

- 1. Go north on LA Hwy 191
- 2. Turn right on LA Hwy 174
- 3. Take US -171 north
- 4. Continue on US-84/US-171
- 5. Turn right on Gibb St
- 6. Turn right on Jefferson

Site: 43-E-1002

Hospital: Desoto Regional Health System

301 Jefferson St Mansfield, LA 71052

318/871-1080

- 1. Take US -171 north
- 2. Continue on US-84/US-171
- 3. Turn right on Gibb St
- 4. Turn right on Jefferson

SITE: 60-E-1004

Springhill Medical Center Hospital:

2001 Doctors

Springhill, LA 71075-4526

318/539-1000

- 1. Take LA Hwy 7 north to Springhill
- 2. Turn right on Butler St
- 3. Turn left on Giles St
- Turn right on Machen Dr
 Turn left on 11th ST NE
- 6. Turn right on Humana Dr



Back to Directions

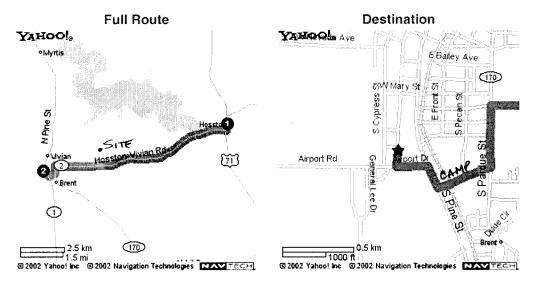
Starting from: 1 Hosston, LA

Arriving at: 2 Desoto Regional Health Systems

1000 S Spruce, Vivian, LA 71082-3232

(318) 871-1080

Distance: 7.5 miles Approximate Travel Time: 17 mins



Directions	Miles	
1. Start on CAMELLIA ST	0.1	1
2. Turn Left on CYPRESS RD	0.2	7
3. Turn Right on LA-2	6.4	۲
4. Turn Left on S PARDUE ST	0.3	1
5. Turn Right on CAMP RD	0.2	۲
6. Turn Right on S PINE ST	0.1	L
7. Turn Left on AIRPORT DR	0.1	7
8. Turn Right on S SPRUCE ST	0.1	

Distance: 7.5 miles Approximate Travel Time: 17 mins

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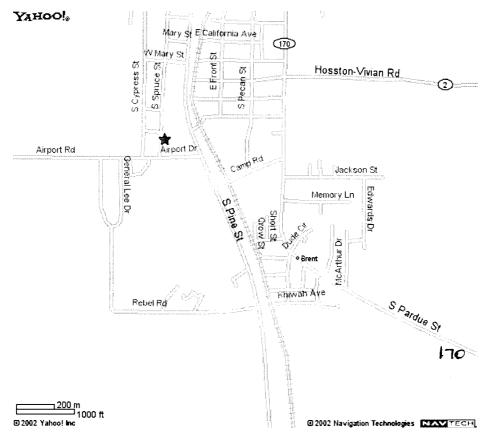


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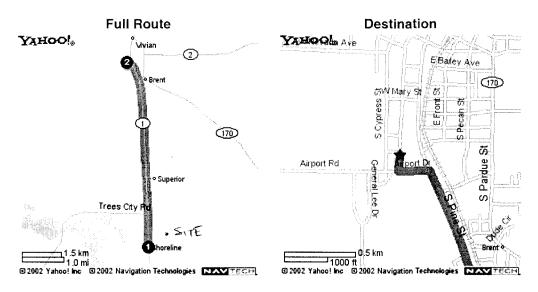
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Back to Directions

Arriving at: 2 1000 S Spruce, Vivian, LA 71082-3232

Distance: 4.6 miles Approximate Travel Time: 8 mins



Directions	Miles	
1. Start on N MARKET ST	0.8	1
2. Continue on LA-1/LA-2	2.5	1
3. Continue on S PINE ST	1.0	1
4. Turn Left on AIRPORT D	PR 0.1	7
5. Turn Right on S SPRUCE	EST 0.1	

Distance: 4.6 miles Approximate Travel Time: 8 mins

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Back to Directions

Starting from: ODixie, LA

Arriving at: 2 1000 S Spruce, Vivian, LA 71082-3232

Distance: 20.1 miles Approximate Travel Time: 40 mins

Destination **Full Route** YAHOO! YAHOOL AVE o Solley Hin2 E Barey Ave (70) Nonterev 9 Gilliam Ivail Boxes ö Airport Rd ee Dr • Hayti 2.5 mi/ Arlatex no! Inc © 2002 Navigation Techno 1000 ft

Directions	Miles	
1. Start on DIXIE SHREVEPORT RD	0.7	1
2. Turn Left on SENTELL RD	0.6	4
3. Continue on MOORINGSPORT RD	1.6	1
4. Continue on DIXIE-MOORINGSPORT RD	4.1	Î
5. Turn Right on N MARKET ST	9.3	٢
6. Continue on LA-1 S/LA-2	2.5	1
7. Continue on S PINE ST	1.0	Ť
8. Turn Left on AIRPORT DR	0.1	7
9. Turn Right on S SPRUCE ST	0.1	۲

Distance: 20.1 miles Approximate Travel Time: 40 mins

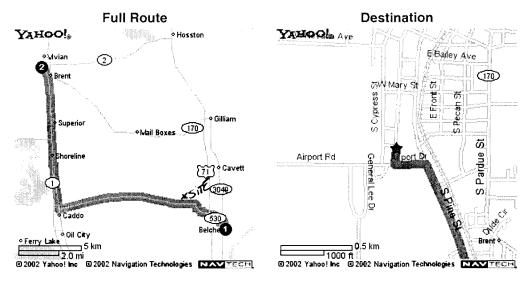
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Back to Directions

Arriving at: 2 1000 S Spruce, Vivian, LA 71082-3232

Distance: 16.4 miles Approximate Travel Time: 35 mins



irec	tions	Miles	
1. S	tart on CHURCH ST	0.1	1
2. B	ear Right on GRAY ST	0.2	7
3. Tı	urn Left on BRIARFIELD RD/CADDO ST	0.0	1
4. C	ontinue on CADDO ST	0.1	1
5. C	ontinue on CADDO BELCHER RD/CADDO ST	1.0	1
6. C	ontinue on BELCHER-OIL CITY RD	0.7	5
7. Tı	urn Left on BELCHER-OIL CITY RD/CADDO-BELCHER RD	4.2	7
8. C	ontinue on BELCHER-OIL CITY RD	2.7	1
9. Tı	urn Right on LA-538	2.2	Ļ
10. Tı	urn Right on N MARKET ST	1.3	T
11. C	ontinue on LA-1/LA-2	2.5	1
12. C	ontinue on S PINE ST	1.0	1
13. Tı	urn Left on AIRPORT DR	0.1	7
14. Tı	urn Right on S SPRUCE ST	0.1	r



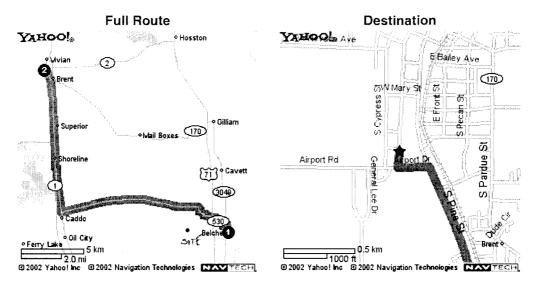
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Back to Directions

Arriving at: 2 1000 S Spruce, Vivian, LA 71082-3232

Distance: 16.4 miles Approximate Travel Time: 35 mins



Dir	ections	Miles	
1.	Start on CHURCH ST	0.1	1
2.	Bear Right on GRAY ST	0.2	7
3.	Turn Left on BRIARFIELD RD/CADDO ST	0.0	7
4.	Continue on CADDO ST	0.1	1
5.	Continue on CADDO BELCHER RD/CADDO ST	1.0	1
6.	Continue on BELCHER-OIL CITY RD	0.7	
7.	Turn Left on BELCHER-OIL CITY RD/CADDO-BELCHER RD	4.2	7
8.	Continue on BELCHER-OIL CITY RD	2.7	Î
9.	Turn Right on LA-538	2.2	r
10.	Turn Right on N MARKET ST	1.3	r
11.	Continue on LA-1/LA-2	2.5	1
12.	Continue on S PINE ST	1.0	1
13.	Turn Left on AIRPORT DR	0.1	1
14.	Turn Right on S SPRUCE ST	0.1	r
Dis	stance: 16.4 miles Approximate Travel Time: 35 mins	A	TO STATE OF THE PARTY OF THE PA



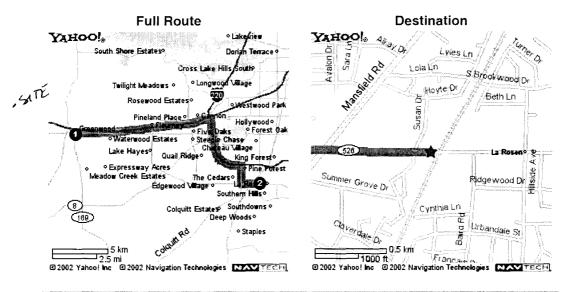
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Arriving at: 2510 Bert Kouns Industrial Loop, Shreveport, LA 71118-3119

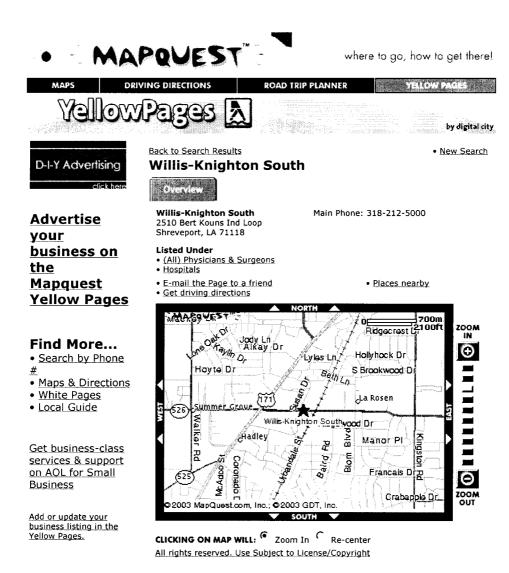
Distance: 13.3 miles Approximate Travel Time: 23 mins



Dir	rections	Miles	
1.	Start on OLD BETHANY RD	0.1	1
2.	Turn Right on TEXAS RD	1.2	۲
3.	Continue on GREENWOOD RD	0.1	ን
4.	Take the I-20 EAST ramp	0.3	7
5.	Merge on I-20 EAST	5.5	7
6.	Take the I-220 BY-PASS EAST/LA-3132 EAST exit towards ALEXANDRIA, exit #11	0.6	7
7.	Merge on LA-3132 EAST	3.2	7
8.	Take the WALKER RD exit, exit #3	0.2	7
9.	Continue on WALKER RD	1.0	r
10.	Turn Left on BERT KOUNS INDUSTRIAL LOOP EXPY	1.1	1

Distance: 13.3 miles Approximate Travel Time: 23 mins

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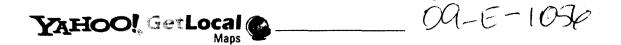
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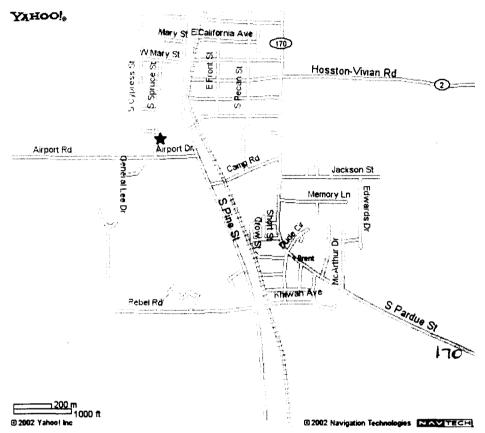
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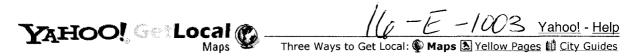


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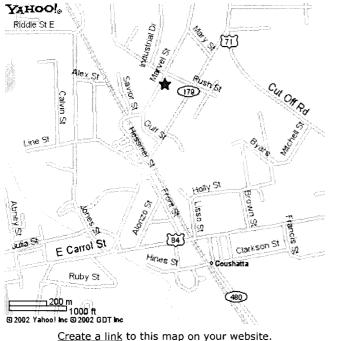
Address: # 1635 Marvel St

Coushatta, LA 71019-9022 Save Address

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[_**3**_]

[<u>5</u>]

[_6_]

[**7**]

[8]

[9] [10]

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Arriving at: 2 Christus Coushatta Health Care Center

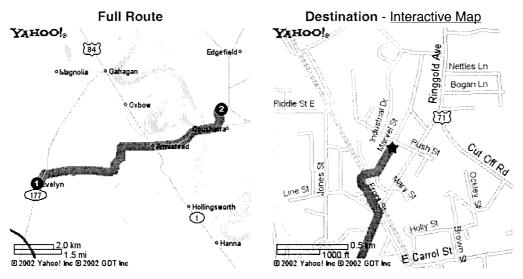
1635 Marvel St, Coushatta, LA 71019-9022

(318) 932-2000 Save Address

Distance: 7.3 miles Approximate Travel Time: 14 mins

Email Directions Printable Version

Text Only Driving Directions



Directions	Miles	
1. Start on LA-510	0.0	1
2. Turn Left on LA-177	0.4	7
3. Turn Right on RARISH ROAD 607	4.0	Ļ
4. Continue on US-84	2.2	1
5. Bear Left on RINGGOLD AVE	0.3	້
6. Turn Left on FRONT ST/HESSMER ST	0.1	7
7. Continue on FRONT ST	0.1	1
8. Turn Left on MARVEL ST	0.1	7



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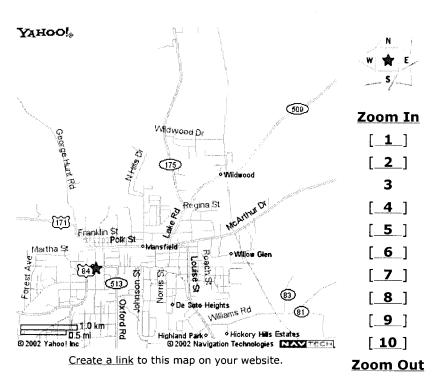
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City, State or Zip

Mansfield, LA 71052-1

Country

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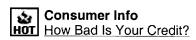
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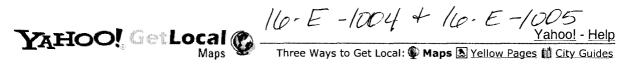




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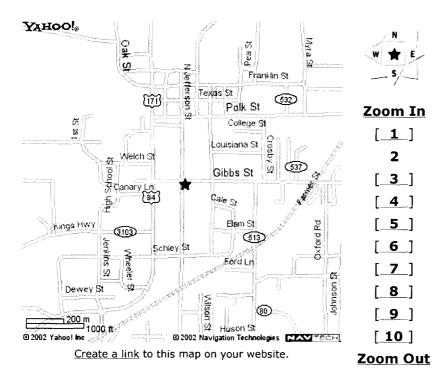
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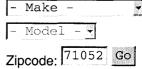
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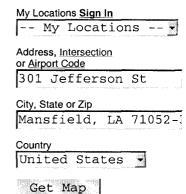


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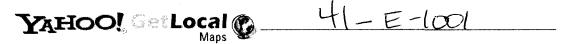
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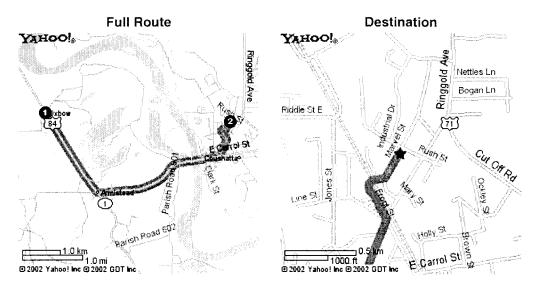
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Starting from: Oxbow, LA

Arriving at: 2 1635 Marvel St, Coushatta, LA 71019-9022

Distance: 4.4 miles Approximate Travel Time: 6 mins



Directions	Miles	
1. Start on UNNAMED STREET	0.0	1
2. Turn Right on US-84	3.7	r
3. Bear Left on RINGGOLD AVE	0.3	ን
4. Turn Left on FRONT ST/HESSMER ST	0.1	7
5. Continue on FRONT ST	0.1	Ť
6. Turn Left on MARVEL ST	0.1	7

Distance: 4.4 miles **Approximate Travel Time:** 6 mins

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Starting from: 1 Converse, LA Save Address

Arriving at: 2 Desoto Regional Health Systems

301 Jefferson St, Mansfield, LA 71052-3201

(318) 871-1080 Save Address

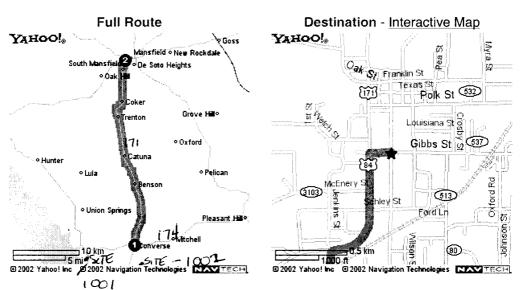
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Distance: 18.5 miles Email Directions

Approximate Travel Time: 33 mins

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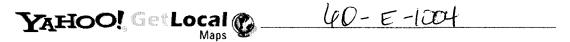
Text Only Driving Directions



Directions	Miles	
1. Start on E PORT ARTHUR AVE	0.0	†
2. Turn Right on N FRONT ST/W FRONT	1.0	Ļ
3. Continue on US-171	16.8	1
4. Turn Right on US-84/US-171	0.5	Ļ
5. Turn Right on GIBBS ST	0.1	Ļ

Distance: 18.5 miles Approximate Travel Time: 33 mins

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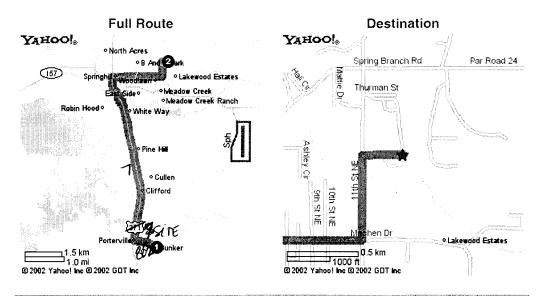
Back to Directions

Arriving at: 2 Springhill Medical Ctr

2001 Doctors Dr, Springhill, LA 71075-4526

(318) 539-1000

Distance: 6.7 miles Approximate Travel Time: 11 mins



Directions	Miles	
1. Start on PORTERVILLE RD	0.6	1
2. Turn Right on US-371	4.2	Ļ
3. Turn Right on BUTLER ST	0.3	Ļ
4. Turn Left on N GILES ST	0.0	7
5. Turn Right on MACHEN DR	0.9	۲
6. Turn Left on 11TH ST NE	0.4	7
7. Turn Right on HUMANA DR	0.2	r

Distance: 6.7 miles Approximate Travel Time: 11 mins

When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.

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ATTACHMENT – 4 HAZARD EVALUATIONS

Hazard Evaluation Information

OILS: CRUDE

CAUTIONARY RESPONSE INFORMATION Common Synonyms Floats on water. Flammable vapor may be produced. Keep people away. Shut off ignition sources and call fire department. Avoid contact with liquid. Notify local health and pollution control agencies. Protect water intakes Combustible Fire Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water CALL FOR MEDICAL AID **Exposure** VAPOR Not irritating to eyes, nose, or throat. LIQUID Irritating to skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. FIN EYES, hold eyelids open and flush with plenty of water HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify local health and wildlife softicials. Water **Pollution**

1. CORRECTIVE RESPONSE ACTIONS
Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn;
Absorb
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: 33;
 Miscellaneous Hydrocarbon Mixtures
 2.2 Formula: Not applicable
 2.3 IMO/UN Designation: 3.1/1267
 2.4 DOT ID No.: 1267

- CAS Registry No.: Currently not available NAERG Guide No.: 128 Standard Industrial Trade Classification: 33300

3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: Goggles or face shield; rubber gloves and boots
- 3.2 Symptoms Following Exposure: May irritate eyes and skin.
- 3.3 Treatment of Exposure: EYES: flush with water for at least 15 min. SKIN: wipe off and wash with soap and water.
- 3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed
- 3.6 TLV-Ceiling: Not listed.
- 3.7 Toxicity by Ingestion: Currently not available3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Currently not available
- 3.10 Vapor (Gas) Irritant Characteristics: Vapors are nonirritating to the eyes and throat.
- 3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
- 3.12 Odor Threshold: Currently not available
- 3.13 IDLH Value: Not listed. 3.14 OSHA PEL-TWA: Not listed
- 3.15 OSHA PEL-STEL: Not listed.
- 3.16 OSHA PEL-Ceiling: Not listed.
- 3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

- 4.1 Flash Point: 20-90°F C.C
- **4.2 Flammable Limits in Air:** Currently not available
- 4.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide
- 4.4 Fire Extinguishing Agents Not to Be
 Used: Water may be ineffective Special Hazards of Combustion Products: Not pertinent
- 4.6 Behavior in Fire: Not pertinent
- **4.7 Auto Ignition Temperature:** Currently not available
- 4.8 Electrical Hazards: Not pertinent
- 4.9 Burning Rate: 4 mm/min.
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichometric Air to Fuel Ratio: Not
- **4.12 Flame Temperature:** Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
- 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water: No reaction
- 5.2 Reactivity with Common Materials: No reaction
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 5.5 Polymerization: Not pertinent
- 5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 3 ppm/*/fresh water fish/toxic/fresh water 200 ppm/24 hr/corals: porites/20-90% normal response/salt water *Time period not specified.

- 6.2 Waterfowl Toxicity: Currently not available
- 6.3 Biological Oxygen Demand (BOD): Currently not available
- 6.4 Food Chain Concentration Potential:
- 6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Wide variety, depending on oil field where produced.
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Open (flame arrester) 7.5 IMO Pollution Category: Currently not available
- 7.6 Ship Type: Currently not available 7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Flammable liquid
- 8 2 49 CFR Class: 3
- 8.3 49 CFR Package Group: I
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification:

Category Classification Health Hazard (Blue)...... 1 Flammability (Red)..... 3 Instability (Yellow)..... 0

- 8.6 EPA Reportable Quantity: Not listed.
- 8.7 EPA Pollution Category: Not listed. 8.8 RCRA Waste Number: Not listed
- 8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL **PROPERTIES**

- 9.1 Physical State at 15° C and 1 atm: Liquid
- 9.2 Molecular Weight: Not pertinent
- **9.3 Boiling Point at 1 atm:** 90->750°F = 32->400°C = 305->673°K
- 9.4 Freezing Point: Not pertinent
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)
- 9.8 Liquid Surface Tension: 24-38 dynes/cm = 0.024-0.038 N/m at 20°C
- 9.9 Liquid Water Interfacial Tension: Currently not available
- 9.10 Vapor (Gas) Specific Gravity: Not pertinent
- 9.11 Ratio of Specific Heats of Vapor (Gas):
 Not pertinent
- 9.12 Latent Heat of Vaporization: 140-150 Btu/lb = 76-86 cal/g = 3.2-3.6 X 105 J/kg
- 9.13 Heat of Combustion: -18,252 Btu/lb = -10,140 cal/g = -424.54 X 10 ⁵ J/kg
- 9.14 Heat of Decomposition: Not pertinent
- 9.15 Heat of Solution: Not pertinent
- 9.16 Heat of Polymerization: Not pertinent 9.17 Heat of Fusion: Currently not available
- 9.18 Limiting Value: Currently not available
- 9.19 Reid Vapor Pressure: 0.10 psia

NOTES

OILS: CRUDE

	9.20 LIQUID DENSITY	9. LIQUID HEA	21 T CAPACITY		22 L CONDUCTIVITY		23 ISCOSITY
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84	43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700 43.700	50 52 54 56 60 62 64 66 68 70 72 74 76 80 82 84 84 88 90	0.460 0.461 0.462 0.463 0.464 0.465 0.466 0.467 0.468 0.470 0.471 0.472 0.473 0.474 0.475 0.476 0.477 0.478 0.479 0.480	35 40 45 50 55 60 65 70 75 80 85 90	0.920 0.919 0.918 0.917 0.916 0.915 0.914 0.912 0.911 0.910 0.909	50 52 54 56 58 60 62 64 66 68 70 72 74 76 80 82 84	9.343 8.841 8.370 7.927 7.511 7.119 6.751 6.404 6.078 5.770 5.481 5.207 4.950 4.707 4.260 4.056 3.862

SOLUBILIT	.24 TY IN WATER	9. SATURATED VA	25 POR PRESSURE	9. SATURATED V	26 APOR DENSITY	9. IDEAL GAS H	27 EAT CAPACITY
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I N S O L U B L E	70 75 80 85 80 85 90 95 100 105 115 120 135 140 145 155 160 175 180 185 190	0.042 0.049 0.057 0.065 0.076 0.087 0.100 0.114 0.131 0.149 0.170 0.193 0.218 0.247 0.279 0.314 0.352 0.395 0.443 0.495 0.552 0.615 0.683 0.758 0.841 0.930		N O T PERTINENT		NOT PERT-NENT

HYDROGEN SULFIDE

CAUTIONARY RESPONSE INFORMATION Common Synonyms Rotten egg odor, Sulfuretted hydrogen Sulphuretted hydrogen but odorless at poisonous concentrations Sinks and boils in water. Poisonous, flammable, visible vapor cloud is Keep people away. Avoid contact with gas. Wear goggles and self-contained breathing apparatus Shut off ignition sources and call fire department. Evacuate area in case of large discharges. Stay upwind and use water spray to "knock down" vapor Notify local health and pollution control agencies Fire FLAMMABLE. Flashback along vapor trail may occur Flastiback along vapor train may occur. May explode if ignited in an enclosed area. Wear goggles and self-contained breathing apparatus. Stop flow of gas if possible. Cool exposed containers and men effecting shutoff with water. CALL FOR MEDICAL AID. **Exposure** VAPOR POISONOUS IF INHALED. Irritating to eyes. Move to fresh air If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. IF IN EYES, hold eyelids open and flush with plenty of water HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. Water May be dangerous if it enters water intakes Notify local health and wildlife officials. **Pollution**

1. CORRECTIVE RESPONSE ACTIONS	2. CHEMICAL DESIGNATIONS
Dilute and disperse Stop discharge	2.1 CG Compatibility Group: Not listed.
Stop discharge	2.2 Formula: H ₂ S
	2.3 IMO/UN Designation: 2.0/1053
	2.4 DOT ID No.: 1053
	2.5 CAS Registry No.: 7783-06-4
	2.6 NAERG Guide No.: 117
	2.7 Standard Industrial Trade Classification:

Notify operators of nearby water intakes

3. HEALTH HAZARDS

52242

- 3.1 Personal Protective Equipment: Rubber-framed goggles; approved respiratory protection.
- 3.2 Symptoms Following Exposure: Irritation of eyes, nose and throat. If high concentrations are inhaled, hyperpnea and respiratory paralysis may occur. Very high concentrations may produce pulmonary edema
- 3.3 Treatment of Exposure: INHALATION: remove victim from exposure; if breathing has stopped, give artificial respiration; administer oxygen if needed; consult physician. EYES: wash with plenty of
- 3.4 TLV-TWA: 10 ppm
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: 15 ppm
- 3.7 Toxicity by Ingestion: Hydrogen sulfide is present as a gas at room temperature, so ingestion not likely.
- 3.8 Toxicity by Inhalation: Currently not available
- 3.9 Chronic Toxicity: Currently not available
- 3.10 Vapor (Gas) Irritant Characteristics: Vapor is moderately irritating such that personnel will not usually tolerate moderate or high vapor concentrations.
 3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may
- cause smarting and reddening of the skin.

 3.12 Odor Threshold: 0.0047 ppm
- 3.13 IDLH Value: 100 ppm 3.14 OSHA PEL-TWA: Not listed.
- 3.15 OSHA PEL-STEL: 50 ppm, 10 minute peak once per 8 hour shift.
- 3.16 OSHA PEL-Ceiling: 20 ppm.
- 3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

- 4.1 Flash Point: Flammable gas
- 4.2 Flammable Limits in Air: 4.3%-45%
- 4.3 Fire Extinguishing Agents: Stop flow of
- 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
- 4.5 Special Hazards of Combustion Products: Toxic gases are generated in
- **4.6 Behavior in Fire:** Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.
- 4.7 Auto Ignition Temperature: 500°F
- 4.8 Electrical Hazards: Not pertinent
- 4.9 Burning Rate: 2.3 mm/min. (liquid)
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichometric Air to Fuel Ratio: 7.1 (calc.)
- **4.12 Flame Temperature:** Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): 2.0 (calc.)
- 4.14 Minimum Oxygen Concentration for Combustion (MOCC): N₂ diluent: 7.5%; CO₂ diluent: 11.5%

5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water: No reaction
- 5.2 Reactivity with Common Materials: No reaction
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 5.5 Polymerization: Not pertinen
- 5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

- 6.1 Aquatic Toxicity: 1.38 ppm/48 hr/fathead minnows/TL_m/fresh water sat./0.5 hr/bullia/lethal/salt water
- 6.2 Waterfowl Toxicity: Currently not
- 6.3 Biological Oxygen Demand (BOD): Currently not available
- 6.4 Food Chain Concentration Potential:
- 6.5 GESAMP Hazard Profile: Bioaccumulation: 0 Damage to living resources: 3 Human Oral hazard: 2

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Purified; technical
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Safety relief
- 7.5 IMO Pollution Category: Currently not available
- 7.6 Ship Type: Currently not available
- 7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Poison gas
- 8.2 49 CFR Class: 2.3
- 8.3 49 CFR Package Group: Not pertinent.
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification:

Category Classifi Health Hazard (Blue)	cation
Health Hazard (Blue)	3
Flammability (Red)	4
Instability (Yellow)	0

- 8.6 EPA Reportable Quantity: 100 pounds
- 8.7 EPA Pollution Category: B
- 8.8 RCRA Waste Number: U135
- 8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL **PROPERTIES**

- 9.1 Physical State at 15° C and 1 atm: Gas
- 9.2 Molecular Weight: 34.08
- 9.3 Boiling Point at 1 atm: -76.7°F = -60.4°C = 212.8°K
- 9.4 Freezing Point: -117°F = -82.8°C = 190.4°K
- 9.5 Critical Temperature: 212.7°F = 100.4°C =
- 9.6 Critical Pressure: 1300 psia = 88.9 atm = 9.01 MN/m²
- 9.7 Specific Gravity: 0.916 at -60°C (liquid)
- 9.8 Liquid Surface Tension: (est.) 30 dynes/cm = 0.03 N/m at -61°C
- 9.9 Liquid Water Interfacial Tension: Currently not available
- 9.10 Vapor (Gas) Specific Gravity: 1.2
- 9.11 Ratio of Specific Heats of Vapor (Gas):
- 9.12 Latent Heat of Vaporization: 234 Btu/lb = 130 cal/g = 5.44 X 10⁵ J/kg
- 9.13 Heat of Combustion: -6552 Btu/lb = -3640
- $cal/g = -152.4 \times 10^5 \text{ J/kg}$
- 9.14 Heat of Decomposition: Not pertinent
- 9.15 Heat of Solution: Not pertinent 9.16 Heat of Polymerization: Not pertinent
- 9.17 Heat of Fusion: 16.8 cal/g
- 9.18 Limiting Value: Currently not available 9.19 Reid Vapor Pressure: Currently not available
- NOTES

HYDROGEN SULFIDE

9. SATURATED L	.20 LIQUID DENSITY	9. LIQUID HEA	21 T CAPACITY	9. LIQUID THERMA	22 L CONDUCTIVITY	9. LIQUID V	23 ISCOSITY
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	NOT PERTINENT	-96 -94 -92 -90 -88 -86 -84 -82 -80 -78	0.430 0.430 0.430 0.430 0.430 0.430 0.430 0.430 0.430		NOT PERT-NENT	-111	0.510

	0.24 TY IN WATER		25 APOR PRESSURE		26 APOR DENSITY		.27 EAT CAPACITY
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	NOT PERTINENT	-80 -75 -60 -60 -55 -50 -45 -40 -35 -30 -25 -20 -15 -10 -5 0 5 10 25 30 35 40 45	13.260 15.210 17.400 19.820 22.520 25.500 28.780 32.390 36.360 40.700 45.440 50.600 56.210 62.290 68.879 76.000 83.669 91.919 100.799 110.299 120.500 131.299 143.000 155.290 168.500 182.400	-80 -75 -60 -65 -60 -55 -40 -45 -40 -35 -20 -15 -10 -5 0 5 10 15 20 25 30 35 40 45	0.11090 0.12560 0.14170 0.15950 0.17890 0.20000 0.22300 0.24800 0.27510 0.30430 0.33570 0.36960 0.40590 0.44880 0.48630 0.57780 0.68130 0.73770 0.79730 0.79730 0.86040 0.92680 0.99680 1.07000 1.14800	0 25 50 75 100 125 125 1250 1255 250 275 300 425 450 475 500 525 550 575 600	0.236 0.237 0.239 0.240 0.241 0.242 0.244 0.245 0.248 0.229 0.251 0.252 0.254 0.255 0.257 0.258 0.260 0.262 0.264 0.265 0.267 0.269 0.271

HEAT STRESS PREVENTION AND TREATMENT

Elevated temperatures are potentially hazardous. Especially when work is conducted without appropriate precautions. The following sections describe heat stress prevention and the recognition and treatment of heat emergencies.

Effects of Heat

A predictable amount of heat is generated as a result of normal oxidation processes within the body. If h is liberated rapidly, the body cools to a point at which the production of heat is accelerated, and the exce heat brings the body temperature back to normal.

Interference with the elimination of heat leads to its accumulation and to the elevation of body temperature. This condition produces a vicious cycle in which certain body processes accelerate and generate addition heat. Afterward, the body must eliminate not only the heat that is normally generated but also the addition quantities of heat.

Most body heat is brought to the surface by the bloodstream and escapes to cooler surroundings by conduction and radiation. If moving air or a breeze strikes the body, additional heat is lost by convection When the temperature of the surrounding air becomes equal to or rises above the body temperature, all theat must be lost by vaporization of the moisture or sweat from skin surfaces. As the air becomes more humid (contains more moisture), vaporization from the skin decreases. Weather conditions including hig temperatures (90 to 100 degrees F), high humidity, and little or no breeze cause the retention of body her Such conditions or a succession of such days (a heat wave) increase the chances of a medical emergency due to heat.

Preventing Emergencies Due to Heat

When working in situations where the ambient temperatures and humidity are high, and especially in situations where protection levels A. B. or C are required. the site safety officer should:

- Ensure that all employees drink plenty of fluids (Gatorade or its equivalent);
- Ensure that frequent breaks are scheduled so overheating does not occur; and
- Revise work schedules, when necessary, to take advantage of the cooler parts of the day (i.e., 5:00 a.i. to 11:00 a.m. and 6:00 p.m. to nightfall).

When protective clothing is required. the suggested guidelines correlating ambient temperature and maximum wearing time per excursion are:

HEAT STRESS PREVENTION AND TREATMENT

Elevated temperatures are potentially hazardous. Especially when work is conducted without appropriate precautions. The following sections describe heat stress prevention and the recognition and treatment of heat emergencies.

Effects of Heat

A predictable amount of heat is generated as a result of normal oxidation processes within the body. If heat is liberated rapidly, the body cools to a point at which the production of heat is accelerated, and the excess heat brings the body temperature back to normal.

Interference with the elimination of heat leads to its accumulation and to the elevation of body temperature. This condition produces a vicious cycle in which certain body processes accelerate and generate additional heat. Afterward, the body must eliminate not only the heat that is normally generated but also the additional quantities of heat.

Most body heat is brought to the surface by the bloodstream and escapes to cooler surroundings by conduction and radiation. If moving air or a breeze strikes the body, additional heat is lost by convection. When the temperature of the surrounding air becomes equal to or rises above the body temperature, all the heat must be lost by vaporization of the moisture or sweat from skin surfaces. As the air becomes more humid (contains more moisture), vaporization from the skin decreases. Weather conditions including high temperatures (90 to 100 degrees F), high humidity, and little or no breeze cause the retention of body heat. Such conditions or a succession of such days (a heat wave) increase the chances of a medical emergency due to heat.

Preventing Emergencies Due to Heat

When working in situations where the ambient temperatures and humidity are high, and especially in situations where protection levels A. B. or C are required, the site safety officer should:

- Ensure that all employees drink plenty of fluids (Gatorade or its equivalent);
- Ensure that frequent breaks are scheduled so overheating does not occur; and
- Revise work schedules, when necessary, to take advantage of the cooler parts of the day (i.e., 5:00 a.m. to 11:00 a.m. and 6:00 p.m. to nightfall).

When protective clothing is required. the suggested guidelines correlating ambient temperature and maximum wearing time per excursion are:

Maximum Wearing Time per Excursion

Ambient Temperature

Above 90 degrees F	15 minutes
85 to 90 degrees F	30 minutes
80 to 85 degrees F	60 minutes
70 to 80 degrees F	90 minutes
60 to 70 degrees F	120 minutes
50 to 60 degrees F	180 minutes

One method of measuring the effectiveness of an employee's rest-recovery regime is by monitoring the heart rate. The 'Brouha guideline' is one such method and is performed as follows:

- Count the pulse rate for the last 30 seconds of the first minute of a 3-minute period, the last 30 seconds of the second minute, and the last 30 seconds of the third minute; and
- Double each result to yield beats per minute.

If the recovery pulse rate during the last 30 seconds of the first minute is 110 beats/minute or less, and the deceleration between the first, second, and third minutes is at least 10 beats/minute, then the work-recovery regime is acceptable. If the employee's rate is above the rate specified, a longer rest period will be required. accompanied by an increased intake of fluids.

Heat Emergencies

Heat Cramps. Heat cramps usually affect people who work in hot environments and perspire a great deal. Loss of salt from the body causes very painful cramps in leg and abdominal muscles. Heat cramps may also result from drinking iced water or other drinks either too quickly or in too large a quantity. The symptoms of heat cramps are:

- Painful muscle cramps in legs and abdomen;
- · Faintness: and
- Profuse perspiration.

To provide emergency care for heat cramps. move the patient to a cool place. Give him or her sips of Liquids such as Gatorade or its equivalent. Apply manual pressure to the cramped muscle. Move the patient to a hospital if there is any indication of a more serious problem.

Heat Exhaustion. Heat exhaustion also may occur in individuals working in hot environments and may be associated with heat cramps. Heat exhaustion is caused by the pooling of blood in the vessels of the skin. The heat is transported from the interior of the body to the surface by the blood. The skin vessels become dilated and a large amount of blood is pooled in the skin. This condition, plus the blood that is pooled in the lower extremities when in an upright position, may lead to an inadequate return of blood to the heart and eventual physical collapse. The symptoms of heat exhaustion are:

• Weak pulse:

- Rapid and usually shallow breathing
- Generalized weakness:
- Pale. clammy skin:
- Profuse perspiration:
- Dizziness/faintness: and
- Unconsciousness.

To provide emergency care for heat exhaustion, move the patient to a cool place and remove as much clothing as possible. Have the patient drink cool water. Gatorade, or its equivalent. If possible, fan the patient continually to remove heat by convection, but do not allow chilling or overcooling. Treat the patient for shock and move him or her to a medical facility if there is any indication of a more serious problem.

Heat Stroke. Heax stroke is a profound disturbance of the heat-regulating mechanism and is associated with high fever and collapse. It is a serious threat to life and carries a 20% mortality rate. Sometimes this condition results in convulsions, unconsciousness, and even death. Direct exposure to sun, poor air circulation, poor physical condition, and advanced age (over 40) increase the chance of heat stroke. Alcoholics are extremely susceptible. The symptoms of heat stroke are:

- Sudden onset;
- Dry, hot, and flushed skin;
- Dilated pupils:
- Early loss of consciousness:
- Full and fast pulse:
- Deep breathing at first, followed by shallow or faint breathing;
- Muscle twitching, growing into convulsions: and
- Body temperature reaching 105 to 106 degrees F or higher.

When providing emergency care for heat stroke, remember that it is a life-threatening emergency. Transportation to a medical facility should not be delayed. Move the patient to a cool environment, if possible, and remove as much clothing as possible. Ensure an open airway. Reduce body temperature promptly by dousing the body with water or, preferably, by wrapping the patient in a wet sheet. If cold packs are available, place them under the arms, around the neck, at the ankles, or any place where blood vessels that lie close to the skin can be cooled. Protect the patient from injury during convulsions.

<u>ATTACHMENT – 5</u> LOST OR DAMAGED PROPERTY FORMS

LOST OR DAMAGED PROPERTY FORMS VEHICLE ACCIDENTS, PROPERTY LOSS, THEFT, ETC.

When an accident does occur, it is very important to notify HQ and Regional Office as soon as possible! We have designed a form that covers all the required information for the company and our insurance carrier (see attached). The importance of timely notification of detailed information to HQ cannot be stressed enough.

Call/fax the form to HQ as soon as possible with accident information. Include how and when we can reach you with further instructions or questions.

Here are some pertinent steps that should be followed:

INJURIES

-Notify E & E Personnel Department of Emergency Response Center

RENTAL CAR

- Call police if accident involves another vehicle or injuries
- Exchange license and registration information
- Call car rental agency and inform them of the accident. Give them HQ address, phone number and Administrative Services Department (716/684-8060, Ext. 2802) for future contact
- If car is not drivable, inform rental agency to provide towing
- Complete rental agency's accident report form and send copy to HQ along with copy of rental agreement (both sides).

CORPORATE VEHICLE

- Call police if accident involves another vehicle or injuries
- Exchange license and registration information
- Notify Headquarters or Region to receive instructions
- Complete E & E's "Notice of Loss" report and sent to Headquarters/Region
- If appropriate, send at least three estimates and P.R., etc. to Headquarters/Region

GOVERNMENT EQUIPMENT

The local police need to be summoned regardless of the extent of damage.

All capital equipment items that are missing, stolen, or damaged need to be reported to the ZPMO so the appropriate documentation (see attached Report of Theft/Loss, etc.) and reporting to EPA can be conducted. Timely reporting will also facilitate replacement or repair to the item.

Attached to this form should be any police reports, photographs, estimates for replacement or repair and logbook entries related to the condition of the equipment. If appropriate, include PRs and 7-point justification documents for <u>quick replacement</u>. Equipment that is missing, stolen or damaged should be reported to the ZPMO within 5 working days of the incident.

PERSONAL VEHICLE

Personal vehicles used for work are not insured by the company. Though the company pays for mileage, coverage for damage to your car, personal injury or other involved property is your own responsibility. Moving violations and traffic tickets received while on the job are entirely the responsibility of the employee.

^{**}Remember - if you are involved in an accident, give only the facts, do not admit fault.

ECOLOGY AND ENVIRONMENT, INC. 368 Pleasantview Drive Lancaster, NY 14086 (716)684-8060/(716)684-0844

NOTICE OF LOSS RE Call/Fax to HQ ASAP	CPORT		FX Claim Number
TYPE OF LOSS ☐ Automobile	☐ Other Liability	□ Fire	□ Theft
OWNERSHIP OF VEH ☐ Rental	HICLE Government	□ E & E	
Date and Time of Loss:_			
Police or Fire Departmen	nt to whom reported:		
Location of Accident or	Loss:		
Road Conditions:			
Description:			
Vehicle Information: ${(Y)}$	ear, Make, Model, License Plate #	, VIN #, Rental Agreement	#)
Driver Information: (N	ame, Address, License #, Date of	Birth)	
Other Vehicle and Drive (Year, Make, Model, Lic	er Information: cense Plate #, Name, Address, Lice	ense #, Phone, Alternate Pho	one #)
Damage to your vehicle:			
Damage to other vehicle	:		
Other vehicle or property	y insured? If yes, Name of	Insurance Company, Addre	ess and
Policy Number:			
Injured: (Name, Address	s, Age, Extent of Injuries, Hospital		
Witnesses: (Name, Addi	ress, Phone Numbers)		
Additional Information	or Remarks:		_
Please attach the follow	ving information: Police Report, Pl	hotographs, Copy of Rental	Agreement (both s

and Rental Accident Report. If applicable, send Estimates, Repair Bills, PR, etc. as soon as possible.

ATTACHMENT - 6 BLANK SAFETY FORMS

ecology and environment, inc. DAILY SAFETY MEETING RECORD **GENERAL INFORMATION** Project: OPA Site Assessments at 14 Facilities in Louisiana Contract No: DACW56-02_G-1001 Project No.: 001562.CU0_ Project Location: Date: Time: Weather: Specific Location: Planned Activities: SAFETY TOPICS PRESENTED Chemical Hazards Update: Physical Hazards Update: Radiation Hazards Update: Review of Previous Monitoring Results: Protective Clothing/Equipment Modifications: Special Equipment/Procedures: Emergency Procedures: Additional Topics/Observations: Team Members' Comments/Suggestions:

DAILY SAFETY MEETING RECORD

1. Emergency information reviewed? and made familiar to all team members? 2. Route to nearest hospital driven? and its location known to all team members? 3. Health and safety plan readily available and its location known to all team members? ***PATENDEES*** **Meeting shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held prior to work and when site tasks and/or conditions change. **Name (Printed)** **Name (Printed)** **Name (Signature)** **Date** **Representing (Company/Agency)** **Name (Printed)** **		INITIAL PROJECT SAFETY CHE	CKLIST	
3. Health and safety plan readily available and its location known to all team members? ATTENDEES Meeting shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held prior to work and when site tasks and/or conditions change. Name (Printed) Name (Signature) Date Representing (Company/Agency)	Emergency information reviewed?	and made familiar to	all team members	?
Meeting shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held prior to work and when site tasks and/or conditions change. Name (Printed) Name (Signature) Date Representing (Company/Agency)	2. Route to nearest hospital driven?	and its location known	n to all team mem	pers?
Meeting shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held prior to work and when site tasks and/or conditions change. Name (Printed) Name (Signature) Date Representing (Company/Agency) Representing (Company/Agency) Representing (Company/Agency) Representing (Company/Agency) Representing (Company/Agency)	3. Health and safety plan readily available a	and its location known to all team members	s?	
prior to work and when site tasks and/or conditions change. Name (Printed) Name (Signature) Date Representing (Company/Agency) Approximate tasks and/or conditions change. Representing (Company/Agency) Approximate tasks and/or conditions change.	ATTENDEES			
	Meeting shall be attended by all personne prior to work and when site tasks and/or	l who will be working within the exclusion conditions change.	on area. Daily int	formal update meetings will be held
Meeting Conducted By:	Name (Printed)	Name (Signature)	Date	Representing (Company/Agency)
Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
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Meeting Conducted By:				
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Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
Meeting Conducted By:				
	Meeting Conducted By:			

	ecology and environment, inc.		
SITE SAFETY AND HEALTH PLAN ACCEPTANCE			
Project: OPA Site Assessments at 14 Facilities in Louisiana			
Contract No: DACW56-02-G-1001	Project No.: 00	1562.CU0	

Project Location: Varies				
Project Manager: Jeff Foshee		Project Director: Jim Dellinger		
The undersigned acknowledge that they have read and understood and agree to abide by the site safety and health plan.				
Name (Printed)	Name (S	ignature)	Date	

<u>ATTACHMENT - 7</u> COMPLETED SAFETY FORMS

ecology and environment, inc.			
	SAFETY AND HEAD	TH PLAN ACCEPT.	ANCE
Project: OPA Site Assessments at 14 Facility	ties in Louisiana		
Contract No: DACW56-02-G-1001		Project No.: 001	702,0001
Project Location: Varies			
Project Manager: David Beeson		Project Director: Jim	n Dellinger
The undersigned acknowledge that they have	e read and understood a	nd agree to abide by th	ne site safety and health plan.
Name (Printed)	Name (Si	gnature)	Date
David Beeson			02-14-03
PAUL JAMES	530	0457	02-17-03
Justin Farrell	San	udel	02-17-03
Patrick Johnson	(1) Tes		02-17-03
Amanda Bordelon	auly ?	malle	02-23-03
	9		
		-	
		·	

ecology and environment, mc.
DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001 Project No.: (001702, CU03, 3623
Project Location: H&R WBI SBRNICE I INC DRAFE
Date: 2/17/2003 Time: 13:00 Weather: CLEAR, UDF Specific Location: TANK FARM - FUMP JACKS, ARMISTEAN, TA
Planned Activities:
SITE ASSESSMENT
SAFETY TOPICS PRESENTED
Chemical Hazards Update: NONE
Chemical Hazards Update: NONE Physical Hazards Update: NONE
Radiation Hazards Update: Nows
Review of Previous Monitoring Results:
Protective Clothing/Equipment Modifications:
LEVEL D,
Special Equipment/Procedures:
N/A
Emergency Procedures:
3 LONG BLAST HORN & MEET ATTRULK TO ACCESS SITUATION ~
Additional Topics/Observations:
Team Members' Comments/Suggestions:

JUSTIN FARRELL Patrick Johnson

DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001 Project No.: 6 00702. CU03. 3615 \(\frac{1}{2} \) 3616
Project Location: SABINE PARISH
Date: 2/18/03 Time: 4:05 Weather: CLEAK, 770'S.
Specific Location: BRU AST CONTAINMENT AREA, PITS & PUMP JOKE WELL
Planned Activities: E03615, E03616
SAFETY TOPICS PRESENTED
Chemical Hazards Update: NONS
Physical Hazards Update: NoNG
Radiation Hazards Update:
Review of Previous Monitoring Results:
Protective Clothing/Equipment Modifications:
LEVEL >
Special Equipment/Procedures:
SAME
Emergency Procedures:
3 LONG HORN BLAST ON TRUCK, MEET AT TRUCK TO ACCESS STUATION ~
Additional Topics/Observations:
Team Members' Comments/Suggestions:
10

Patrick Johnson & Satrick John

DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001 Project No.: 001702, CU03, 3613/14/23
Project Location: PE SOTO PAICICH
Date: 2 19 72003 Time: 0005 Weather: 010005605
Specific Location: = \$3613, 593614
Planned Activities: SITE ASSESSMENTS / NO SAMPUNOS
SAFETY TOPICS PRESENTED
Chemical Hazards Update: NONS
Physical Hazards Update: NONE
Radiation Hazards Update: So Farc NORM READING HAVE KEEN <1) MR/Hr.
Review of Previous Monitoring Results:
Protective Clothing/Equipment Modifications:
LEVEL D.
Special Equipment/Procedures:
NONE
Emergency Procedures:
3 LONG TSLAST ON TEXCK HORAD - CREW MEETAT TRUCK TO ASSES SITUATION.
Additional Topics/Observations: TIC WAS FOUND LAST NIGHT ON CREW MEMBER =
Team Members' Comments/Suggestions: NONE

TUSTIN FARRELL SAMMUL
Patrick Johnsa Patrick

ecology and environment, inc.
DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001
Project Location: CADD PARRISH
Date: 2 20 2003 Time: 0615 Weather: RAIN, 50S.
Specific Location: FACILITYES IN CASDO PARRISH = WELL LOCATIONS.
Planned Activities: OPA FACILITY WELL ASSESMENTS just S. of Viviain, L
SAFETY TOPICS PRESENTED
Chemical Hazards Update: NONE
Physical Hazards Update: NONG
Radiation Hazards Update:
Review of Previous Monitoring Results:
Protective Clothing/Equipment Modifications: LEVEL .
Special Equipment/Procedures:
NONE
Emergency Procedures: 3 LDNG BLOWS ON TRUCK HORN, CREW MEET AT
TRUCK TO ACCESS SITUATION AT HAND,
Additional Topics/Observations:
Team Members' Comments/Suggestions: NoNE

Fatrick Jhra

JUSTIN FARRELL

ecology and environment, inc.
DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001 Project No.: 00/70Z, CU03, 36//
Project Location: LADO FARRISTO 1
Date: 2 21 03 Time: 0605 Weather: PAN 50°C
Specific Location: ED3611-CR95TAL OIL COMPANY
Planned Activities:
and collect tax assessor information
SAFETY TOPICS PRESENTED
Chemical Hazards Update:
Physical Hazards Update: NONE - SLITPERT SURFICES
Radiation Hazards Update: Zoo MR/Hr FOUND ON SOME DRILLING EQUIPMENT Review of Previous Monitoring Results: DZ/HZS/LEL/DVA ALL AT RG. LEVELS
Review of Previous Monitoring Results: 27 HzS/LEL/DVA ALL AT RG. LEVEZS
Protective Clothing/Equipment Modifications:
Special Equipment/Procedures:
Emergency Procedures: 3 LONGS BLASTON TRUCK HORN, CIREN MEET AT TRUCK TO AGUSSS SITUATION?
Additional Topics/Observations:

Team Members' Comments/Suggestions:

TAUL JAMES

JUSTIN THREEL

FRIGEICK JOHNSON

ecology and environment, inc. DAILY SAFETY MEETING RECORD **GENERAL INFORMATION** Project: OPA Site Assessments at 14 Facilities in Louisiana 001702, CU03. 3608 Contract No: DACW56-02 G-1001 Project No.: . PARISH Project Location: Time: Date: Specific Location: Planned Activities: FAULTY/WELL ASSESSMENTS SAFETY TOPICS PRESENTED Chemical Hazards Update: Physical Hazards Update: None Radiation Hazards Update: Review of Previous Monitoring Results: Protective Clothing/Equipment Modifications: LEVEL T Special Equipment/Procedures: NONE **Emergency Procedures:** ELONG BAST ON TRUCK HOPEN, CREW MEET AT TRUCK TO ASSESS SITUATION, Additional Topics/Observations: Team Members' Comments/Suggestions: USL particular caution wy only 2

PAVIJAMES

JUSTIN FARESCE

ecology and environment, inc. DAILY SAFETY MEETING RECORD **GENERAL INFORMATION** Project: OPA Site Assessments at 14 Facilities in Louisiana 001702,0403,3608 Contract No: DACW56-02_G-1001 Project No.: (ATRISIA **Project Location:** Weather: CIFAR To Todd Oil -Wells Specific Location: Lo near Vivian, LA Planned Activities: ASSESS MENTS CITIES SAFETY TOPICS PRESENTED Chemical Hazards Update: (, TOP) COMFOUNDS Physical Hazards Update: SLIPS TRIP, FALL, RAD READING RANGED FROM 0-250 Radiation Hazards Update: Review of Previous Monitoring Results: Protective Clothing/Equipment Modifications: ISVEL). Special Equipment/Procedures: **Emergency Procedures:** 3 LONG BLAST ON TRUCK HOW, CICEN MEST, AT TRUCK TO ACCESS SITUATION SII IR NEEDED Additional Topics/Observations: NON/

DUSTIN FARRELL SOLLAR
Amanda Bordelin dull Jodell

Team Members' Comments/Suggestions:

DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001 Project No.: 001562.CU0_ 7002 CU103, 3617 \$ 3618
Project Location: CANDO PARISA
Date: 2-24-03 Time: 06:15 mm Weather: Overcast Cold
Specific Location: Todd Brod Taylor & Taylor A Rain 405
Date: 2-24-03 Time: 06:15 am Weather: Overcast Colorspecific Location: Todd Prod Taylor & Taylor A Rain 403 Planned Activities: of abundoned oil & gas production facility assess Ment
SAFETY TOPICS PRESENTED
Chemical Hazards Update: petroleum hydrocarbons
Physical Hazards Update: 5/ipr tripi & falls; flora/fauna; machetter
Radiation Hazards Update: Possible NORM
Review of Previous Monitoring Results: None
Protective Clothing/Equipment Modifications: Level Dup grade to Level Ciff
Special Equipment/Procedures: wachetter
Emergency Procedures: 5/18/agts on norn; meet @ touch; assess situation; 911; egress to hospital
Additional Topics/Observations:
Team Members' Comments/Suggestions:

JUSTIM FARRELL SAMPLES
Amanda Bordelon auch Brall

DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001
Project Location: Laddo Parish - J. H. Hawkins - Porough & LP Co, - Abney 3621
Date: 2-25-03 Time: 06/5 Weather: Wintry Mix
Specific Location: N. of Shrewpart LA - New Oil City LA
Planned Activities: baseline assessment of abundoned oils
yas production facilities
SAFETY TOPICS PRESENTED
Chemical Hazards Update: petroleum hydrocarbons
Physical Hazards Update: Slips trips and falls cold stress; frostbite
Radiation Hazards Update: None expected; possible elevated NORM
Review of Previous Monitoring Results: rusty ladders; lockjaw; 5/ips & trips
Protective Clothing/Equipment Modifications: Level D, wf possible upgrade to level C
Special Equipment/Procedures: Alone
Emergency Procedures: 3 LONG blasts on truck horn & render vous Etruck; assess; III; egress to nearest trospital
e vuice; assoss; Ill; egress to nearest trospital
Additional Topics/Observations:
Team Members' Comments/Suggestions: watch for fatigues during day
+: 1

Justin Favrell Sollandeller Amanda Borduler August Baduler Taur Baduler

ceology and charles, me.
DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001 Project No.: (
Project Location: CADDO PARISIA 3619
Date: 2-20-03 Time: 0605 Weather: 107 FRAIN 29-30's
Project Location: CADDO PARISA Date: Z-2Co-03 Time: 0605 Weather: 1et Frank 29°-30's Specific Location: ED 3621 Mear Wascom TX Jalong State Line Rd.
Planned Activities: SITE ASSESS MENT
SAFETY TOPICS PRESENTED
Chemical Hazards Update: 1774, STEX, NAPHALLINES
Physical Hazards Update: SLP 7781P FALL, GOLD STRESS
Radiation Hazards Update: <12 4R/Hr AT THE FACILITY ON Z-25-03 Review of Previous Monitoring Results: OPPM on OVA / <12 MT / Hr
Review of Previous Monitoring Results: OPPM on OVA / < 17 MTS/H
Protective Clothing/Equipment Modifications:
Level D
Special Equipment/Procedures:
NONE
Emergency Procedures: 3 CONG BLAST ON TRUCK HOPEN, CREW MEET ATTRUCK TO ASSESS SITUATION (USE RADIO CELLTAONE)
Additional Topics/Observations:
Team Members' Comments/Suggestions:

Faul D. James, JR Amanda Bordelan JUSTIN FARRELL

DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 14 Facilities in Louisiana
Contract No: DACW56-02_G-1001 Project No.: 00/707, U03. 3620
Project Location: addo Parish
Date: 2/27/03 Time: 06/15 Weather: 36 - high 45° (budg)
Specific Location: Smith Resources / Washington & Jackson / Sklar Ganen
Planned Activities: Site Assessment & de mobilization of staff and equipment
equipment
SAFETY TOPICS PRESENTED
Chemical Hazards Update: TPH, BTEX; Naphhale
Physical Hazards Update: Slip Frip, fall; and Stress
Radiation Hazards Update: LIZ LeR/hr at the facility on 2/26/03
Review of Previous Monitoring Results: Dppm on WA / ZIZ WR/Jur
Protective Clothing/Equipment Modifications:
LevelD
Special Equipment/Procedures:
None
Emergency Procedures: 3 long blasts on truck horn. Crew west at truck to assess
studion (use vadios/cell phones)
Additional Topics/Observations:
Team Members' Comments/Suggestions:
Amanda h Bordela General & Dordela
Au James DOCATO
Justin HARRELL

ecology and environment, inc. DAILY SAFETY MEETING RECORD **GENERAL INFORMATION** Project: OPA Site Assessments at 14 Facilities in Louisiana 1st quarter 2003 Contract No: DACW56-02_G-1001 < ? Project No.: 001562.CU0 Project Location: Wascom, TX ,, @15mi. W of Shrevepor

Date: 4-24-03 Time: D605 Weather: Mac+ 1 Specific Location: LPOperating - Abrey near Wascom Raim 803 Planned Activities: Stage prep. equip. ; 4 wheeler oper. safety class) phase 2 sampling à finish assesse à locate SAFETY TOPICS PRESENTED Chemical Hazards Update: Flora/Fauna; slips Trips Falls Physical Hazards Update: none expected; reviewed action level Radiation Hazards Update: reviewed missing components Review of Previous Monitoring Results: Protective Clothing/Equipment Modifications: Level D wy possible upgrade to C. Special Equipment/Procedures: Huttellers / El safety class snake bite procedures Emergency Procedures: 3 blasts on vetricle horn (LONG) & meet a truck to assess sperform First Hid Additional Topics/Observations: Team Members' Comments/Suggestions: Need 2 way radion

	INITIAL PROJE	ECT SAFETY CH	ECKLIST	
Emergency information reviewed?	725 and made familiar to all team members?			
2. Route to nearest hospital driven?				
3. Health and safety plan readily available	and its location known	to all team members	s?	
ATTENDEES				
Meeting shall be attended by all personn	el who will be working	within the exclusion	on area. Daily info	ormal update meetings will be held
prior to work and when site tasks and/or				
Name (Printed)	Name (Si	gnature)	Date 4-24-03	Representing (Company/Agency)
Sharing team	V MI J	10 10		EE
Sharon Barker	Sugar	Barter	4-24-03	ETE
Justin Farrell	All	ell_	V	\mathcal{V}
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•				AND THE RESERVE OF THE PERSON
:				
Meeting Conducted By:	Justin	F.		
	· .			
	/	<u> </u>		
Ď.	ــــــــــــــــــــــــــــــــــــــ	vironment, inc.		
	SAFETY AND HEA	CTHPTANAGEE	PTANCE	
Project: OPA Site Assessments at 14 Facili	ities in Loxisiana			
Contract No: DACW56-02-G-1001 Project No.: 001562.CU0_				

ecology and environment, inc.					
DAILY SAFETY MEETING RECORD					
GENERAL INFORMATION					
Project: OPA Site Assessments at 14 Facilities in Louisiana 1st quarter 2003					
Contract No: DACW56-02_G-1001					
Project Location: Waskom TR / No. LA					
Date: 4/25/2003 Time: 0600 Weather: Clear					
Specific Location: LP Operating Co-Abney					
Planned Activities: Environmental Schipling, finish as Jess Ment					
SAFETY TOPICS PRESENTED					
Chemical Hazards Update: Refroleum hydrocarbons					
Physical Hazards Update: 5) in trips, + falls, 4-wheeler sefety, bent sakty					
Radiation Hazards Update: None expected					
Review of Previous Monitoring Results: None above background					
Protective Clothing/Equipment Modifications:					
Special Equipment/Procedures: 4- Wheeler, boot					
Emergency Procedures: 3 blasts on vehicle horn, meet at truck call 911 & necessary					
Additional Topics/Observations:					
Team Members' Comments/Suggestions:					

	INITIAL PROJECT SAFETY CHE					
Emergency information reviewed? Route to nearest hospital driven?	e S and made familiar to	all team members?				
2. Route to nearest hospital driven?	and its location know	n to all team membe	ers?			
3. Health and safety plan readily available	and its location known to all team members	s? Yes				
ATTENDEES	ATTENDEES					
Meeting shall be attended by all personno prior to work and when site tasks and/or	el who will be working within the exclusion conditions change.	on area. Daily info	ormal update meetings will be held			
Name (Printed) Name (Signature) Date Representing (Company/Ag						
Sharon Barker	SharonBarke	4/25/03	EAE			
DAVID BOS-	1	U	L			
Justin Fatrell	* Mull	4/240	5 V			
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Meeting Conducted By: Sharnh	Mer 4/2/03					
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3	ecology and environment, inc.					
SITE SAFETY AND HEALTH PLAN ACCEPTANCE						
Project: OPA Site Assessments at 14 Facili	/\//					

22

Contract No: DACW56-02-G-1001

Project No.: 001562.CU0_

ecology and environment, inc. DAILY SAFETY MEETING RECORD **GENERAL INFORMATION** Project: OPA Site Assessments at 14 Facilities in Louisiana 1st quarter 2003 Project No.: 001562.CU0 Contract No: DACW56-02 G-1001 Project Location: Shreveport, Louisiana Specific Location: along state line; LP operating-Abrey (E03621) 705

Planned Activities: Continue env. 8 ampling = 80ils; water of pits (298): MANNE (0000) (298); MMD'S (029); & CONIT (089) SAFETY TOPICS PRESENTED BTEX; petroleum hydrocarbons Chemical Hazards Update: Physical Hazards Update: slips; trips & falls / flora; fauna none expected Radiation Hazards Update: all background Review of Previous Monitoring Results: Protective Clothing/Equipment Modifications: Level I ut possible upgrade to Lol. C Special Equipment/Procedures: 4 wheelers / boat Emergency Procedures: 3 long blasts on truck horr trees. Additional Topics/Observations: daily tick checks Team Members' Comments/Suggestions:

prior to work and when site tasks and/or conditions change.		INITIAL PROJECT SAFETY	CHECKLIST	
ATTENDEES Meeting shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held prior to work and when site tasks and/or conditions change. Name (Printed) Name (Signature) Date Representing (Company/Agency) Sharm Barker Date Weeting Stall Present Under Stall Stall Will 13 The Date Representing (Company/Agency) Sharm Farrell Wild 3 The Meeting Conducted By: Weeting Conducted B	Emergency information reviewed?		ar to all team members?	•
ATTENDEES Meeting shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held prior to work and when site tasks and/or conditions change. Name (Printed) Name (Signature) Date Representing (Company/Agency) Sharm Barker Dated Representing (Company/Agency) 4/24/03 4 Will 103 Will	2. Route to nearest hospital driven?	4c5 and its location k	nown to all team memb	ers?
Meeting Shall be attended by all personnel who will be working within the exclusion area. Daily informal update meetings will be held prior to work and when site tasks and/or conditions change. Name (Printed) Name (Signature) Date Representing (Company/Agency) Sharon Karker Placary Balle 4/26/03 4 Worker Parce M 4/26/03 Meeting Conducted By: When Farce M 4/26/33 Meeting Conducted By: When Farce M 4/26/33	3. Health and safety plan readily available		nbers? 45	
prior to work and when site tasks and/or conditions change. Name (Printed) Name (Signature) Sharon Barker David Bressin Justin Faire U Meeting Conducted By: Neeting Conducted By: Name (Signature) Name (Signature) Name (Signature) Date Representing (Company/Agency) Held 03 ETB Held 03 Letter Hel	ATTENDEES	-		
Sharon Borker Slaver Back 4/26/03 4 David Breson 4/26/03 4 Sucher Faire W 4/26/03 4 Meeting Conducted By: Justin Faire W 4/26/03 ecology and (nivionment, inc.	Meeting shall be attended by all personn prior to work and when site tasks and/or	el who will be working within the exc conditions change.	lusion area. Daily inf	ormal update meetings will be held
David Breson Sustra Farrell 4/24/03 Meeting Conducted By: Justra Farrell 4/24/03 Coology and Anvironment, inc.	Name (Printed)	Name (Signature)	Date	Representing (Company/Agency)
David Breson Sustra Farrell 4/24/03 Meeting Conducted By: Justra Farrell 4/24/03 Coology and Anvironment, inc.	Sharon Barker	Slaver Backe	4/24/03	ETB
Meeting Conducted By: Justin Farrell 4/24/03 Meeting Conducted By: Justin Farrell 4/24/03		11/12	4/28/03	k
Meeting Conducted By: Justin Farrell 4/24/53	Sallall	Sustria Facre U	4/26/03	ч
Meeting Conducted By: Justin Farrell 4/24/33 ecology and environment, inc.	- Anna			
Meeting Conducted By: Justin Farrell 4/24/33 ecology and environment, inc.	<u> </u>			
Meeting Conducted By: Justin Farrell 4/24/33 ecology and environment, inc.				
Meeting Conducted By: Justin Farrell 4/24/33 ecology and environment, inc.				
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Meeting Conducted By: Justin Farrell 4/24/33 ecology and environment, inc.				
Meeting Conducted By: Justin Farrell 4/24/33 ecology and environment, inc.	<u> </u>			
Meeting Conducted By: Justin Farrell 4/24/33 ecology and environment, inc.	i i			
ecology and environment, inc.	•			
ecology and environment, inc.				
ecology and environment, inc.				
ecology and environment, inc.	Meeting Conducted By:	Justin Farrell	4/21/03	
		ecology and environment, inc		
SILE SAFELL AND DEPARTMENT LANCE				
Project: OPA Site Assessments at 14 Facilities in Logistaria			SCH IANCE	
Contract No: DACW56-02-G-1001 Project No.: 001562.CU0_			001562.CU0	

ecology and environment, inc.				
DAILY SAFETY MEETING RECORD				
GENERAL INFORMATION				
Project: OPA Site Assessments at 14 Facilities in Louisiana 1st quarter 2003				
Contract No: DACW56-02_G-1001				
Project Location: Shreve port Texas				
Date: 4-21-03 Time: 0'100 Weather: Clean, Mu tenno 00				
Specific Location: LP Operating - Abney, near Waykom TR Planned Activities: Continue Environmental Sampling				
Planned Activities: Continue Environmental Sampling				
SAFETY TOPICS PRESENTED				
Chemical Hazards Update: Wone expected, possible petroleum hydroactures				
Physical Hazards Update: Sleps, Ireps, falls, Flora & Launa, 4-wheeler Sufery				
Radiation Hazards Update: None expected, evened action levels				
Review of Previous Monitoring Results: Reviewed previous results from file				
Protective Clothing/Equipment Modifications: Level & with posseble upgrade to Cif needed				
Special Equipment/Procedures: Wheeler				
Emergency Procedures: 3 long blasts on vehicle horn. Meet at truck to assess Atuation & perform firsteid or call 911 If needed				
Additional Topics/Observations:				
Team Members' Comments/Suggestions:				

	INITIAL PROJE	CT SAFETY CHE	CKLIST		
Emergency information reviewed?	<u>И15</u> аг	nd made familiar to	all team members?		
1. Emergency information reviewed? and made familiar to all team members? 2. Route to nearest hospital driven? and its location known to all team members?					
3. Health and safety plan readily available	·				
ATTENDEES		`			
Meeting shall be attended by all personn prior to work and when site tasks and/or	el who will be working	within the exclusion	on area. Daily info	rmal update meetings will be held	
Name (Printed)	Name (Si	gnature)	Date	Representing (Company/Agency)	
Shown Rarkor	Alamon de	Benk	4-27-03	AT	
Durio Beeco		<u> </u>	CB-27-63	I-UF	
Tustin Farrell		Ma M	4-27-03	V	
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Meeting Conducted By:	Barba				
`	ecology and en	vironment, inc.			
ecology and environment, inc.					
SITE SAFETY AND HEALTH PLAN ACCEPTANCE Project: OPA Site Assessments at 14 Facilities in Louisiana					
Contract No: DACW56-02-G-1001 Project No.: 001562.CU0_					
Contract No.: DACW36-02-0-1001					

ecology and environment, inc.				
DAILY SAFETY MEETING RECORD				
GENERAL INFORMATION				
Project: OPA Site Assessments at 14 Facilities in Louisiana 15+ Quarter 2003				
Contract No: DACW56-02_G-1001				
Project Location: Shreveport LA. ALEA				
Date: 4-28-03 Time: 0600 Weather: Clear Warm				
Specific Location: Chance for Stowers				
Planned Activities: 1) Contine Dampling activities at FPN 03621				
SAFETY TOPICS PRESENTED				
Chemical Hazards Update: petro ken hydrocarkan, BETEX, unknown				
Physical Hazards Update: ATV, insact/anand bita, st. phipfall, punche & brust/trees heat stress				
Radiation Hazards Update: None				
Review of Previous Monitoring Results: None Anticipated				
Protective Clothing/Equipment Modifications: all Octribus schedule he have D. With				
Inner owter glass, boot cower al tysch or regund				
Special Equipment/Procedures: ATV - follow safety prohables				
Emergency Procedures: 3 - lous blosts on vehicl horn - meet at staying ane				
Additional Topics/Observations:				
Team Members' Comments/Suggestions:				

	INITIAL PROJE					
Emergency information reviewed?	ar	d made familiar to	all team members?			
2. Route to nearest hospital driven? Review	aedan	d its location knows	n to all team memb	ers?		
3. Health and safety plan readily available an	nd its location known t	o all team members	?			
ATTENDEES						
Meeting shall be attended by all personnel prior to work and when site tasks and/or co	who will be working	within the exclusio	on area. Daily info	ormal update meetings will be held		
Name (Printed)	Name (Signature)	nature)	Date	Representing (Company/Agency)		
DAVID BRESON			4-28-03	EXE		
Sharon Barker	Shalon	Barter	4-28-03	ETB		
Justin Farrell	Soll	$ \Delta H$	1	V		
		<u>axa</u>				
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Meeting Conducted By:						
3	ecology and en	vironment, inc.				
SITE S	SITE SAFETY AND HEALTH PLAN ACCEPTANCE					
Project: OPA Site Assessments at 14 Facilities	es in Louisiana					
Contract No: DACW56-02-G-1001 Project No.: 001562.CU0_						

ecology and environment, inc.				
DAILY SAFETY MEETING RECORD				
GENERAL INFORMATION				
Project: OPA Site Assessments at 14 Facilities in Louisiana 1st quarter 2003				
Contract No: DACW56-02_G-1001				
Project Location: North LA				
Date: 04-29-03 Time: 0600 Weather: Gust in mid 80's				
Specific Location: Moteto, FPNE03621 Char haftern then				
Planned Activities: 1) continue sampling activities at E03621.				
2) other activities as regimed				
SAFETY TOPICS PRESENTED				
Chemical Hazards Update: Petroleum hydrocanhom, VOC's				
Physical Hazards Update: 1) ATV 2) 5/ip/frip/fall 3) Sitiolebric 4) insect/animal bit 5) heat stress				
Radiation Hazards Update: None Anticipated				
Review of Previous Monitoring Results: Dec freld dola sheets				
Protective Clothing/Equipment Modifications: /evel D - with inner glows, outer gloves, typel of broad covers as regume				
Special Equipment/Procedures: ATV - Pollow safely rules				
Emergency Procedures: 3 blasts on webul how - ment at stagy onea				
Additional Topics/Observations:				
Team Members' Comments/Suggestions:				

	INITIAL PROJECT SAFETY O	CHECKLIST	
Emergency information reviewed?	and made familia	r to all team members?	
2. Route to nearest hospital driven?	and its location kn	own to all team memb	ers?
3. Health and safety plan readily available	e and its location known to all team mem	bers?	
ATTENDEES			
Meeting shall be attended by all person prior to work and when site tasks and/o	nel who will be working within the excl or conditions change.	usion area. Daily info	ormal update meetings will be held
Name (Printed)	Mame (Signature)	Date	Representing (Company/Agency
David Bess		4-28-03	EIG
Sharon Barker	Sharin Barty	4-29-03	ETS
J. Fattell	Some	1	4
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Meeting Conducted By:	D. Beesn		
			1
2	ecology and environment, inc.		
SIT	E SAFETY AND HEALTH PLAN AG	EEPTANCE	
Project: OPA Site Assessments at 14 Faci	ilities in Louisiana		

Contract No: DACW56-02-G-1001

Project No.: 001562.CU0__

ecology and environment, inc.				
DAILY SAFETY MEETING RECORD				
GENERAL INFORMATION				
Project: OPA Site Assessments at 14 Facilities in Louisiana 1st quarter 2003				
Contract No: DACW56-02_G-1001				
Project Location: Caddo Parish (Streeve port LA) Louisiana				
Date: 4/30/03 Time: 0605 Weather: Ovescast his				
Specific Location: Motel & ED3611 Chance of rain 803				
Planned Activities: Prep camples for lab (<10:30 am) decor. equipment & return 4 wheeler (09:00 am) & proceed to ED3611 Todd-Orystal facility to sample				
SAFETY TOPICS PRESENTED				
Chemical Hazards Update: None expected				
Physical Hazards Update: 5/1/25 trips of falls;				
Radiation Hazards Update: None expected relevated @ E\$3611				
Review of Previous Monitoring Results: reviewed NORM (405@ E0361)				
Protective Clothing/Equipment Modifications: Level d'with possible upgrade to /v/. D modified or /v/. C.				
Special Equipment/Procedures:				
Emergency Procedures: 3 long blasts on truck horn; cell phones; Meet@truck; assess; 911;				
Additional Topics/Observations:				
Team Members' Comments/Suggestions:				

INITIAL PROJECT SAFETY CHECKLIST					
1. Emergency information reviewed? and made familiar to all team members?					
2. Route to nearest hospital driven?	and its location known to all team members?				
3. Health and safety plan readily available	and its location known	to all team members?			
ATTENDEES					
Meeting shall be attended by all personne prior to work and when site tasks and/or	el who will be working conditions change.	within the exclusion	area. Daily inf	ormal update meetings will be h	eld
Name (Printed)	Name (Si	gpature)	Date	Representing (Company/Ager	ncy)
Wird Beasn			480-13	ETE	
Shamberker (Sharon	LBark	4.31.13	BIE	
Justin Farrell			V	V	
Amanda Bordelon	Trule &	Bosolet	V	V	
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Meeting Conducted By:	J. Farrel	/	4/30/03	THE WAY	
ecology and/environment, inc.					
SITE SAFETY AND HEALTH PLAN ACCEPTANCE					
Project: OPA Site Assessments at 14 Facilities in Louisiana					
Contract No: DACW56-02-G-1001					

ecology and environment, inc. DAILY SAFETY MEETING RECORD				
GENERAL INFORMATION 1.4 Allow text 7.00=				
Project: OPA Site Assessments at 14 Facilities in Louisiana 1st quarter 2003				
Contract No: DACW56-02_G-1001				
Project Location: N. La Date: 5.01.03 Time: 06:05 Weather: expected high of 85				
a frame Constitution				
Planned Activities: 1) Continue Dampling activities for 1003 faciltus. Cometty at Jop 09-E-1050				
SAFETY TOPICS PRESENTED				
Chemical Hazards Update: Petroleum hydrocombons, VOC's 1 un knowns				
Physical Hazards Update:				
Radiation Hazards Update: None expected - screened Norm during Phase I assessment				
Review of Previous Monitoring Results: See phan Reld date sheet				
Protective Clothing/Equipment Modifications: / level D + fyvel, mune out glan, and glan bout caus as regued				
Special Equipment/Procedures:				
Emergency Procedures: 3 blast on-horn muf at stagin over				
Additional Topics/Observations:				
Team Members' Comments/Suggestions:				

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Emergency information reviewed?	ar	d made familiar to a	ll team members'	?	
 Emergency information reviewed? and made familiar to all team members? Route to nearest hospital driven? and its location known to all team members? 					
3. Health and safety plan readily available	e and its location known t	o all team members?	1		
ATTENDEES					
Meeting shall be attended by all persons prior to work and when site tasks and/o	nel who will be working r conditions change.	within the exclusion	area. Daily inf	ormal update meetings will be held	
Name (Printed)	Name (Sig	mature)	Date	Representing (Company/Agency)	
David Been	1/1/6	1	5-1.03		
Amanola Bordelon	Mula	Budel	5/1/03	E I E	
Sharon Barker	Theron B	arty	5/1/03	ETE	
		· · · · · · · · · · · · · · · · · · ·			

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Meeting Conducted By:	P. Bees,	~	5-1-03		
	ecology and en	vironment, inc.			
SIT	E SAFETY AND HEAD	THPTANAGEET	TANCE		
Project: OPA Site Assessments at 14 Faci	1/1/2				
Contract No: DACW56-02-G-1001		Project No.: 0015	62.CU0]	

ecology and environment, inc. DAILY SAFETY MEETING RECORD GENERAL INFORMATION Project: OPA Site Assessments at MFacilities in Louisiana 1st quarter 2003 Contract No: DACW56-02 G-1001 Project Location: North HA Date: 5.2.03 Time: 0600 Weather: Quescent to Kenner, appeted Not. Specific Location: Planned Activities: 1) Continue phone II Dampling, activities C) package SCUMBES for Ohyport to lab 3) other activities as regural by Sites SAFETY TOPICS PRESENTED Chemical Hazards Update: Petroleum Hydrocantons, Voladia Organic compands (GTEX) Physical Hazards Update: S1. p/hp/full, inclunt weedle, slambor, Radiation Hazards Update: Non-anticipatel - Norm Screened during Phase I activities Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: (Evel D, with tyvek, boot covers, inner and Owter gloves as required Special Equipment/Procedures: Emergency Procedures: 3 bloot in home - met at stary area	
GENERAL INFORMATION Project: OPA Site Assessments at A Facilities in Louisiana Ist quarter 2003 Contract No: DACW56-02_G-1001 Project Location: North LA Date: 5·2·03 Time: Oboo Weather: Petroleum Phane II Dampling, activities: 1) Continue phane II Dampling, activities: 2) package Benefit Location: Planned Activities: 1) Continue phane II Dampling, activities as regular by Sites SAFETY TOPICS PRESENTED Chemical Hazards Update: Petroleum Hydrocantons, Volathe Organic compounds (Pitex) Physical Hazards Update: Si. phrp/fub; inclust weather, Slauther, Radiation Hazards Update: Non-outle: patel - Norm Screened during Phase I activities Review of Previous Monitoring Results: Sae field data Shaet Protective Clothing/Equipment Modifications: (Evel D, with tyvele, boot covers, innerced Outle gloves as required Special Equipment/Procedures:	ecology and environment, inc.
Project: OPA Site Assessments at NFacilities in Louisiana 1st quarter 2003 Contract No: DACW56-02 G-1001 Project No: 001502.CU0702 Project Location: North LA Date: 5.2.03 Time: Oboo Weather: Overcot to Plance of Autors, expected thick Specific Location: Planned Activities: 1) Continue phane IT Dampling activities 2) package SCriples for Ohpout to lab 3) other activities as regured by Sites SAFETY TOPICS PRESENTED Chemical Hazards Update: Petroleum Hydrocuntur, Volatile Organic compando (BTEX) Physical Hazards Update: Non-anticipatal - Norm screened during Phase I activities Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: (evel D, with tyrch, bost covers, mn excur) Owter gloves as require! Special Equipment/Procedures:	DAILY SAFETY MEETING RECORD
Contract No: DACW36-02 G-1001 Project Location: North LA Date: 5.2.03 Time: 0600 Weather: Over of the Representation of the plane o	
Contract No: DACW36-02 G-1001 Project Location: North LA Date: 5.2.03 Time: 0600 Weather: Over of the Representation of the plane o	Project: OPA Site Assessments at 14 Facilities in Louisiana 1st quarter 2003
Date: 5.2.03 Time: 0600 Weather: Over of the karm, appetent to the bearing appetent to the bearing appetent to the bearing appetent to the bearing activities: 1) Continus phase II Dampling activities as regularly Sites SAFETY TOPICS PRESENTED Chemical Hazards Update: Petroleum Hydrocantans, Volable Organic compounds (BTEX) Physical Hazards Update: \$1.0/hrp/full, influnt weedle, slamber, Radiation Hazards Update: Non-anticipatal - Norm screened during Phase I activities Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: I evel D, with tyvek, boot covers, inner and Owter gloves as required Special Equipment/Procedures:	Contract No: DACW56-02_G-1001
Specific Location: Specific Location: Planned Activities: 1) Continue phane II Dampling activities 2) package Damples for Ohport to lab 3) other activities as regard by sites SAFETY TOPICS PRESENTED Chemical Hazards Update: Petroleum Hydrocantons, Volatile Organic compounds (BTEX) Physical Hazards Update: \$1.p/trp/fubl, inclunt weedle, slambor, Radiation Hazards Update: Non-anticipatal - Norm screened during Phase I activities Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: [evel D, with tyvek, boot covers, inner and Owter gloves as required Special Equipment/Procedures:	
Planned Activities: 1) Continue phane II Dampling activities 2) package Scriples for Ohpont to (ab 3) other activities as regume by sites SAFETY TOPICS PRESENTED Chemical Hazards Update: Petroleum Hydrocantons, Volatile Organie compando (BTEX) Physical Hazards Update: Si.p/trp/full, inclunt weedle, slambon, Radiation Hazards Update: Non-anticipatul - Norm screened during Phase I activities Review of Previous Monitoring Results: Sae field data Shaet Protective Clothing/Equipment Modifications: (evel D, with tyveh, boot covers, inner and Owter gloves an requirel Special Equipment/Procedures:	Date: 5 2 0 3 Time: 0800 Weather: Weren, appetect high
Chemical Hazards Update: Petroleum Hydrocanton, Volatile Organie compounds (BTEX) Physical Hazards Update: St. p/tmp/full, inclunt weather, slambor, Radiation Hazards Update: Non-anticipatul - Norm screened during Phase I activities Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: [evel D, with tyvek, boot covers, innercal Owter gloves as regurnel Special Equipment/Procedures:	Specific Education
Chemical Hazards Update: Petroleum Hydrocanton, Volatile Organie compounds (BTEX) Physical Hazards Update: St. p/tmp/full, inclunt weather, slambor, Radiation Hazards Update: Non-anticipatul - Norm screened during Phase I activities Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: [evel D, with tyvek, boot covers, innercal Owter gloves as regurnel Special Equipment/Procedures:	Planned Activities: 1) Continue phase II Dampling activities 21 package
Chemical Hazards Update: Petroleum Hydroconton, Volathe Organic compounds (BTEX) Physical Hazards Update: S1. p/trp/full, inclunt weally, slambor, Radiation Hazards Update: Non-omtripatel - Norm screened during Phase I activities Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: [evel D, with tyvely, boot covers, inner and Owter gloves as required Special Equipment/Procedures:	Scriples for shout to lab 3) other activities as raquel by sites
Physical Hazards Update: 51. p/hip/full, inclinative while, slambor, Radiation Hazards Update: Non-anticipatul - Norm screened during Phase I activities Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: (evel D, with tyvely, boot covers, inner and Owler gloves as required Special Equipment/Procedures:	
Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: [evel D, with tyveh, bost covers, inner and Owler gloves as required Special Equipment/Procedures:	Chemical Hazards Update: Petroleum Hydrocontars, Volatile organie compounds (BTEX)
Review of Previous Monitoring Results: Sae field data Sheet Protective Clothing/Equipment Modifications: (evel D, with tyvele, boot covers, inner and Owter gloves as regume) Special Equipment/Procedures:	Physical Hazards Update: 51. p/hop/full, inclust weather, stambor,
Protective Clothing/Equipment Modifications: level D, with tyveh, bost covers, unexcul Owter gloves as regumel Special Equipment/Procedures:	Radiation Hazards Update: Non-anticipatel - Norm screened during Phase I activities
Outer gloves an regunal Special Equipment/Procedures:	Review of Previous Monitoring Results: Sae field data Sheet
Outer gloves an regunal Special Equipment/Procedures:	Protective Clothing/Equipment Modifications: level D, with tyrch, boot covers, unexcul
Special Equipment/Procedures:	
Emergency Procedures: 3 blast in hom - met at stany area	Special Equipment/Procedures:
Emergency Procedures: 3 blast in hom - met at stany area	
Emergency Procedures: 3 blast in hom - ment at staging area	
	Emergency Procedures: 3 blast in hom - met at stain area
Additional Topics/Observations:	Additional Topics/Observations:
Team Members' Comments/Suggestions:	Team Members' Comments/Suggestions:

		JECT SAFETY C		
1. Emergency information reviewed?	46)	and made familia	r to all team members	?
2. Route to nearest hospital driven?				pers?
3. Health and safety plan readily availa	ble and its location know	n to all team mem	bers? 465	
ATTENDEES				
Meeting shall be attended by all person prior to work and when site tasks and	onnel who will be working the working the conditions change.	ng within the excl	usion area. Daily inf	ormal update meetings will be held
Name (Printed)	Name (Signature)	Date	Representing (Company/Agency
Sharon Barker	Sheron	Barter	52.03	ESE
Amanda Bordelan	aula	Broble	5/2/03	FtE
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4				
Meeting Conducted By:)	5.207	576
		environment, inc.		
	ITE SAFETY AND HE	ACTHPLANAC	CEPTANCE	·
Project: OPA Site Assessments at 14 Fa	acilities in Louisiana			
Contract No: DACW56-02-G-1001		Project No.: (001562.CU0	

ecology and environment, inc. DAILY SAFETY MEETING RECORD **GENERAL INFORMATION** Project Location: N. Louislana Date: 5-03-03

Time: 0645

Weather: Warm, Showers

Specific Location: Sites 16-E-1003, -1004, -1005 in De Sexto Parish

Planned Activities: Environ mental Jampling of Soils, water, and tank Centents Chemical Hazards Update: Possible non-NOW waste oil Physical Hazards Update: Heat stress, Slips, Lups, & falls, heights, plore of farman Radiation Hazards Update: None & Deold Review of Previous Monitoring Results: Protective Clothing/Equipment Modifications: Level B to sample tank consents at

16-E-1003, ofherwise Level D with possible upgreate

to Level C of cond. From warrant Special Equipment/Procedures: Emergency Procedures: 3 long blasts on vehicle horn, meet at truck to assess situation Additional Topics/Observations: Team Members' Comments/Suggestions:

	INITIAL PROJECT SAFETY CHEC	CKLIST	
1. Emergency information reviewed?	and made familiar to a	ll team members	?
Emergency information reviewed? Route to nearest hospital driven?	and its location known	to all team memb	pers?
3. Health and safety plan readily available	and its location known to all team members?	yes	
ATTENDEES			
Meeting shall be attended by all personne prior to work and when site tasks and/or	l who will be working within the exclusion conditions change.	area. Daily inf	ormal update meetings will be held
Name (Printed)	, Name (Signature)	Date	Representing (Company/Agency)
Sharon Barker	Sharon Barty	5/3/03	BAB
David Becson		~	V
Sharon Barker David Becson Amanda Bordelon	and Dodl	V	√
The state of the s			

•			
Meeting Conducted By: Sharon	Barker S/3/03		
	ecology and environment, inc.		

ecology and environment, inc. SITE SAFETY AND, HEALTH PLAN ACCEPTANCE						
Project: OPA Site Assessments at 14 Facilities in Louisiana						
Contract No: DACW56-02-G-1001	Project No.: 001562.CU0					

ecology and environment, inc.
DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at A Facilities in Louisiana 1st quarter 2003
Contract No: DACW56-02_G-1001 Project No.: 001562.CU0_
Project Location: Shreweport, 2A & surrounding area
Date: 6-24-03 Time: 11:15 UM Weather: 407 = 44 UM 10
Specific Location: E\$3609; 36/3; 36/7; 36/9; & 3673
Planned Activities: Federal overlap site visits uf USEPA & USACE and environmental sampling as necessary
SAFETY TOPICS PRESENTED
Chemical Hazards Update: None expected
Physical Hazards Update: Heat stress; floralfaura; slips trips & falls
Radiation Hazards Update: review action levels
Review of Previous Monitoring Results:
Protective Clothing/Equipment Modifications: Level 0
Special Equipment/Procedures:
NA
Emergency Procedures: 3 long blast on truck horn
Additional Topics/Observations:
Team Members' Comments/Suggestions:

Emergency information reviewed? Route to nearest hospital driven?	ZS ar	CT SAFETY CHECKLIST and made familiar to all team members? d its location known to all team members.							
3. Health and safety plan readily available	3. Health and safety plan readily available and its location known to all team members?								
ATTENDEES									
Meeting shall be attended by all personne prior to work and when site tasks and/or	el who will be working conditions change.	within the exclusion area. Daily inf	ormal update meetings will be held						
Name (Printed)	Name (Sig	gnature) Date	Representing (Company/Agency)						
Justin Farrell		1.11/1 10-24-03							
	gree	2010	2 7 0						
	1								
		`							
•									
Meeting Conducted By: DAVID BEESON		6.24.	282 Inc.						
	ecology and/en	vironment, inc.							
SITE SAFETY AND, HEACTH PLAN ACCEPTANCE									
Project: OPA Site Assessments at 14 Facilities in Louisiana									
Contract No: DACW56-02-G-1001		Project No.: 001562.CU0							

and anython work in a
ecology and environment, inc.
DAILY SAFETY MEETING RECORD
GENERAL INFORMATION
Project: OPA Site Assessments at 1 Facilities in Louisiana
Contract No: DACW56-02_G-1001 Project No.: 001702.CUQ3
Project Location: Webster Parish VE of Shreneport, LA
Date: 9/7/2023 Time: Weather:
Specific Location: FPNEE03622 Harold Hollingshead - Perkins facit
Date: 9/7/2023 Time: Weather: Specific Location: FPN ED 3622 Harold Hollingshead - Perkins facing Planned Activities: Sample CONT 1 & 2 (4 samples total)
SAFETY TOPICS PRESENTED
Chemical Hazards Update: Retro Ce um products
Physical Hazards Update: 51/ps trips of falls
Radiation Hazards Update: NA reviewed action luls.
Review of Previous Monitoring Results:
Protective Clothing/Equipment Modifications: Level D my possible upgrade to L-modified OR C
Special Equipment/Procedures:
NA
Emergency Procedures: 3 long blasts on truck horrz; meet @ truch and assess sit; dial 311; egrest to hospital
Additional Topics/Observations:
Team Members' Comments/Suggestions:

INITIAL PROJECT SAFETY CHECKLIST 1. Emergency information reviewed?							
prior to work and when site tasks and/or	conditions change.	arca. Dany ini	or man apoate meetings will be neid				
Name (Printed)	Name (Signature)	Date	Representing (Company/Agency)				
Justin Farrelly Joseph H.M.S.Coy	O DI WES	9-7-03	Ecol. & Env. Inc				
- WSEPH HIM ICOY	Gosefis HILLER	72003	USACE-TEK-PD				
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		,					
		<u> </u>					
			· · · · · · · · · · · · · · · · · · ·				
Meeting Conducted By:							

ecology and environment, inc.						
SITE SAFETY AND HEALTH PLAN ACCEPTANCE						
Project: OPA Site Assessments at 14 Facilities in Louisiana						
Contract No: DACW56-02-G-1001	Project No.: 001562.CU0					

EPA No.: 16-E-1003 FPN: E03612

APPENDIX 14 CHAIN OF CUSTODY FORMS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

	SPL, Inc.					SPL W	orkorder	No:			13	3558	39				
	A n	Analysis Request & Chain of Custody Record											2 of				
Client Name: Ecdory &	Environ	nent,	Inc	matrix		size	pres.				Re	eques	ted A	nalys			
•	vencas	1 .			glass	vial				stel Stel	R.1				,		
Client Contact: TUSHN 7	Farrell	1		je je	per	40=	VO3	ners	3		,20C						
Project Name: 1603	OPA	17		S=soil O=other:	A=amber V=vial	1=40z 40=vial 6=160z	2=HNO3 O=other:	ntai	6,	25.	الار)						
Project Number: 00170	2.CU	<u>.03</u>		1	l	4=4 16=	1	ပ္မိ	Grea	hulogens Is ptu,	P.Vo						
Project Location: N. Low	usiano	عـــــــ		=water =sludge	P=plastic G=glass	ช	=HCl =H2SO4	Number of Containers	>	25	, TCLRVOC, SVOC, Ris Hebs						
Invoice To:	1 - 1 - 1	CTY . 470	 		=plasti =glass	= 1 lit =802	=HCI =H2S	umb	120	Total Metal	RCI, al t						
SAMPLE ID	DATE	TIME	comp grab	1		- ∞	<u> </u>	Z			ØK 3						
16-E-1004-M2-A	5.3.03	1315	X	S	G	4			X								
DuPE-7	5.3.03		X	S	G	4		7	X								
16-E-1004-0A1-A	5.3.03	1215	人	5	5	4		1	X								
16-E-1003-CI-B	5.3.03	6820	X	5	6	4		1	K								
·	5.3.03	0900	X	0	G	8	-	1									
16-E-1003-TI-A	5.3.03		X	0	6	4		3	メ	X					-		
16-E-1005-CI-A	5.3.03	1355	X	3	6	4	_	. 1	X								
16-E1004-OAI-B	5.363/		K	S	G	4		i	X								
16.E-1003-CI-A	5.3.03	0820	X	S	6	4			X								
16-E-1003-TI-A	5.3.03	0900	X	S	G	Gallon		j	来		X						
Client/Consultant Remarks:				Laborato	ry remark	(s :								Intact	· 9	Y 🔾	N
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Requested TAT	Special Reporting			Cesults		Raw Dat	_	Special	Detection	on Limits	(specify	·):			PM revi	cw (initi	al):
	E .	dard QC	Level	3 QC		Level 4	\propto \Box									······································	
24hr 72hr	1. Relinquished	by Sampler:				date	1/03	time 14!		2. Rece) -	yn	1	3.0	Poce)	
48hr Standard	3. Relinquished	by:				date	1	time		1. Rece	ived by:	7					
Other 🔲	5. Relinquished	by:				date		time		6. Recei	ived by I	aborator	y:				
8880 Interchange Drive,	, Houston, T	X 77054 (7	13) 660-09	901			500 Aı	nbassa	ndor C	affery	Parkw	vay, So	ott, LA	70583	3 (318)	237-4	775
459-Hughes Drive, Trav	erse City, M	I 49684 (6	16) 947-57	77													

EPA No.: 16-E-1003 FPN: E03612

APPENDIX 15 ANALYTICAL LABORATORY RESULTS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

Data Quality Assurance Review

SITE NAME: TransGulf Petroleum Corp. – Varnes

JOB#: 001702.CU03.3612 WORK ORDER: 03050225/03050243

Ecology and Environment, Inc. (E&E) has completed a quality assurance (QA) review for Work Orders 03050225/03050243 for the TransGulf Petroleum Corp. – Varnes and other site assessments. Samples were analyzed for the parameters listed in Louisiana Statewide LAC.43.XIX.313: LDNR 29B: Sixteen (16) soil - oil and grease (O & G) and % moisture. One (1) soil – O & G, pH, metals (arsenic, chromium, zinc, lead, cadmium, silver and selenium), mercury, total barium, electrical conductivity (EC), cation exchange capacity (CEC), sodium absorption ratio (SAR), exchangeable sodium percentage (ESP) and % moisture. One (1) soil – O & G, pH, metals (arsenic, chromium, zinc, lead, cadmium, silver and selenium), TCLP metals (arsenic, barium, cadmium, chromium, lead, selenium and silver), mercury, TCLP mercury, % moisture, TCLP pesticides, TCLP herbicides, TCLP semivolatiles, TCLP volatiles, reactive sulfide, reactive cyanide, ignitability, total organic halides (TOX), BTU, and total sediment and water. Three of the eighteen samples were associated with this facility and have sample numbers and laboratory identifiers listed below.

Sample Numbers

FIELD ID#	LAB ID#	FIELD ID#	LAB ID#
16-E-1003-C1-B	03050225-14	16-E-1003-C1-A	03050225-18
16-E-1003-T1-A	03050225-15/		
	0305243-01		

The data packages were validated to determine if the quality control (QC) specifications identified in the scope of work "1ST Quarter 03 Seventeen North Louisiana OPA Site Assessments for EPA Region 6, DACW56-02-G-0001: Task Order 0003", were achieved using the following acceptance criteria:

- 1) Laboratory QA/QC measurements meet stated laboratory acceptable performance for precision between samples and associated blinded duplicate samples.
- 2) Laboratory blanks do not have reportable concentrations of target analytes.
- Laboratory QA/QC measurements, as reported by the laboratory, meet method acceptable performance for precision between samples and associated internallaboratory duplicate samples.
- 4) Laboratory QA/QC measurements, as reported by the laboratory, meet method

- acceptable performance for accuracy (acceptable percent recovery) for laboratory control samples (LCSs), matrix spikes and matrix-spike duplicates (MS/MSD).
- 5) Laboratory meets the minimal requirements for calibration and continuing calibration check for all target analytes. This review will be limited to an assurance check on frequency and acceptable performance, and will not include an in-depth review of calculations.
- 6) Laboratory meets minimal requirements of cited methodology relating to sample batching, and management of samples. Data validation criteria 4, 5, and 6 were not specifically stated in the statement of work, but constituted due diligence on the part of the data validation chemist.

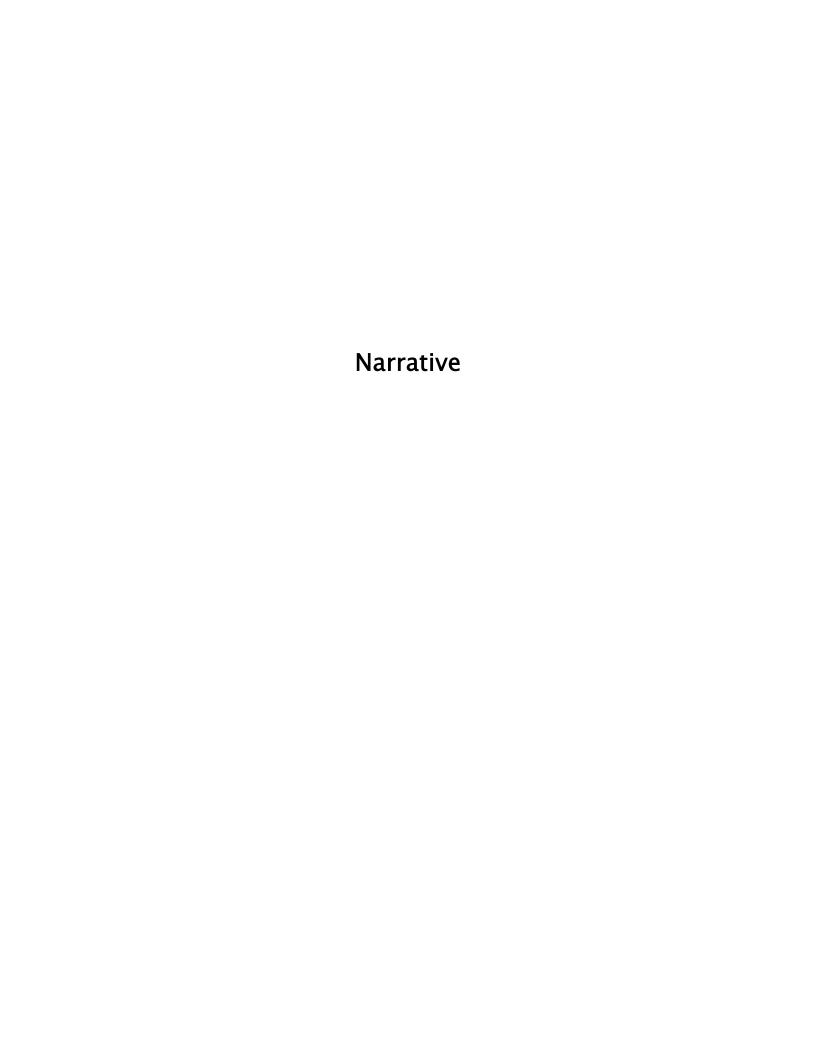
Methodology is stated in the analytical packages. This data quality review was created by the undersigned using the cited methodological sources and review documents, and is complete and accurate to the best of the reviewer's knowledge as documented by the following signature.

Name (please print) Ecology and Environment, Inc.	
David anderson	7/24/03

Date

Reviewer: David Anderson

Signature



I. Overview

Oil and Grease

Samples were prepared and analyzed for oil and grease (O&G) using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following preparation and analytical batches identified.

% Moisture

Samples were prepared and analyzed for percent moisture using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following analytical batches identified.

pН

Samples were prepared and analyzed for pH using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following analytical batches identified.

Metals (arsenic, chromium, zinc, lead, cadmium, silver and selenium)

Samples were prepared and analyzed for metals using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following preparation and analytical batches identified.

Mercury

Samples were prepared and analyzed for mercury using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following preparation and analytical batches identified.

Barium (true total)

Samples were prepared and analyzed for true total barium using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following preparation and analytical batches identified.

Electrical Conductivity

Samples were prepared and analyzed for electrical conductivity (EC) using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following analytical batches identified.

Cation Exchange Capacity

Samples were prepared and analyzed for cation exchange capacity (CEC) using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following preparation and analytical batches identified.

Sodium Absorption Ratio

Samples were prepared and analyzed for sodium absorption ratio (SAR) using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following preparation and analytical batches identified.

Exchangable Sodium Percentage

Samples were prepared and analyzed for exchangeable sodium percentage (ESP) using the procedures specified in *Laboratory Procedures for Analysis of Exploration and Production Waste* (Louisiana Department of Natural Resources, Office of Conservation, Injection and Mining Division, August 1988, Revised November 2001) with the following preparation and analytical batches identified.

TCLP Pesticides

Samples were prepared and analyzed for TCLP pesticides (TCLP Pest) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 1311/8081 with the following preparation and analytical batches identified.

TCLP Herbicides

Samples were prepared and analyzed for TCLP herbicides (TCLP Herb) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 1311/8151A with the following preparation and analytical batches identified.

TCLP Metals (arsenic, barium, cadmium, chromium, lead, selenium and silver)

Samples were prepared and analyzed for TCLP metals (TCLP metals) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 1311/6010B with the following preparation and analytical batches identified.

TCLP Mercury

Samples were prepared and analyzed for TCLP mercury (TCLP Hg) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 1311/7470A with the following preparation and analytical batches identified.

TCLP Semivolatile Organics

Samples were prepared and analyzed for TCLP semivolatile organics (TCLP SVOA) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 1311/8270C with the following preparation and analytical batches identified.

TCLP Volatile Organics

Samples were prepared and analyzed for TCLP volatile organics (TCLP VOA) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 1311/8260B with the following preparation and analytical batches identified.

Reactive Sulfide

Samples were prepared and analyzed for reactive sulfide (Sulfide) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 7.3.4.2 with the following preparation and analytical batches identified.

Reactive Cyanide

Samples were prepared and analyzed for Reactive cyanide (Cyanide) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 7.3.3.2 with the following preparation and analytical batches identified.

Ignitability

Samples were prepared and analyzed for ignitability using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 1010 with the following preparation and analytical batches identified.

Total Organic Halides

Samples were prepared and analyzed for Total Organic Halides (TOX) using the procedures specified in Test Methods for Evaluating Solid Waste Physical/Chemical Properties method 9023 with the following preparation and analytical batches identified.

BTU

Samples were prepared and analyzed for BTU using the procedures specified in ASTM method ASTM-D-240 with the following preparation and analytical batches identified.

Total Solids and Water

Samples were prepared and analyzed for total solids and water (TSW) using the procedures specified in ASTM method ASTM-D-4007 with the following preparation and analytical batches identified.

Sample Number	Matrix	Analysis	Batch Number
43-E-1001-P1-A	SOIL	O&G	R47687
		% Moisture	R47591
		рН	R47563
		Metals	16353
		Hg	16342
		Barium	16396
		EC	16373
		CEC	16401
		SAR	16373
		ESP	16400
43-E-1001-P1-B	SOIL	O&G	R47687
		% Moisture	R47591
41-E-1001-C1-A	SOIL	O&G	R47687
		% Moisture	R47591
43-E-1002-C1-B	SOIL	O&G	R47687
		% Moisture	R47591
43-E-1002-C1-A	SOIL	O&G	R47687
		% Moisture	R47591
43-E-1001-C1-A	SOIL	O&G	R47687
		% Moisture	R47591

Sample Number	Matrix	Analysis	Batch Number
43-E-1001-C1-B	SOIL	O&G	R47687
		% Moisture	R47591
16-E-1004-C1-A	SOIL	O&G	R47687
		% Moisture	R47591
16-E-1004-M1-A	SOIL	O&G	R47814
		% Moisture	R47591
16-E-1004-M1-B	SOIL	O&G	R47814
		% Moisture	R47591
16-E-1004-M2-A	SOIL	O&G	R47814
		% Moisture	R47591
DUPE 7	SOIL	O&G	R47814
		% Moisture	R47591
16-E-1004-OA1-A	SOIL	O&G	R47814
		% Moisture	R47591
16-E-1003-C1-B	SOIL	O&G	R47814
		% Moisture	R47591
16-E-1003-T1-A	SOIL	O&G	R47814
		% Moisture	R47591
		Metals	16353
		Hg	16342
		TCLP Herb	16703
		TCLP Pest	16614
		TCLP Metals	16576
		TCLP Hg	16593
		TCLP SVOA	16618
		TCLP VOA	R48244
		Sulfide	R47766
		Cyanide	R47767
		Ignitability	R47811
		рН	R47563
		TOX	28095
		BTU	None
		TSW	None
16-E-1005-C1-A	SOIL	O&G	R47814

Sample Number	Matrix	Analysis	Batch Number
16-E-1005-C1-A	SOIL	% Moisture	R47591
16-E-1004-0A1-B	SOIL	O&G	R47814
		% Moisture	R47591
16-E-1003-C1-A	SOIL	O&G	R47814
		% Moisture	R47591

II. Summary

The specific analyses conducted on each sample are documented on the chain of custody (COC). Southern Petroleum Laboratories (SPL) provided the specific criteria for QC limits in the data packages. The data were reviewed in accordance with the procedures outlined in *Laboratory Procedures for Analysis of Exploration and Production Waste* and the United States Environmental Protection Agency's (EPA's) *Test Methods for Evaluating Solid Waste* (SW-846; EPA 1997). Additional guidelines for data review are adapted from the EPA's *Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review* (EPA 1994), where appropriate.

The analytical data provided by SPL were reviewed for precision, accuracy, and completeness. All data were deemed acceptable as reported, with the qualifications listed below. Data were qualified according to the applicable guidance if the results were outside the limits specified by the laboratory.

Sample Collection and Shipment

All samples were collected as specified in the work plan unless otherwise noted in the report. All samples were documented on the COC and were analyzed as specified on the COC. The samples were received by SPL at 4 degrees Celsius (°C).

Holding Times

Holding times were established and monitored to ensure analytical results accurately represent analyte concentrations in a sample at the time of collection. Holding times are established by comparing the sampling dates on the COC with the dates of analysis. Exceeding the holding time for a sample generally results in a loss of the analyte due to a variety of mechanisms, such as deposition on the sample container walls or co-precipitation with particulates.

- All samples were received and analyzed by SPL.
- All samples were prepared and analyzed within method hold times.

Method Blanks

The assessment of blank analysis results determines the existence and magnitude of contamination resulting from field or laboratory activities. Generally, any concentrations exceeding the detection limit in a laboratory blank is likely to be present as a contaminant from some phase of the extraction or analytical procedure. Any associated low-level sample concentrations may be biased high.

- Field blanks were not prepared or analyzed with these samples.
- Method blanks were prepared and analyzed with each analytical batch for O&G, metals, mercury, CEC, TCLP herbicides, TCLP pesticides, TCLP metals, TCLP mercury, TCLP SVOA, TCLP VOA, sulfide, cyanide, ignitability and TOX. A method blank was not reported for the extractable metals analyses used in the ESP calculations or for the true total barium.
- Target analytes were not detected in any of the method blanks associated with the samples.

Laboratory Control Sample Analysis

The laboratory control sample (LCS) is analyzed to monitor the efficiency of the preparation procedure and analytical instrument operation. The laboratory's ability to successfully analyze a LCS demonstrates that there are no analytical problems related to the sample preparation procedures and/or instrument operations

- LCSs were prepared and analyzed with each batch for O&G, metals, mercury, CEC, TCLP herbicides, TCLP pesticides, TCLP metals, TCLP mercury, TCLP SVOA, TCLP VOA and ignitability.
- LCSs were not prepared for the extractable metals analyses used in the ESP calculations, sulfide, cyanide and TOX..
- LCS percent recoveries were within SPL control limits for all reported analyses.

Matrix Spike Analysis

The matrix spike analyses are designed to evaluate the accuracy of the analytical method on various matrices and to evaluate possible effects of the sample matrix on target analyte recovery. To assess any possible matrix interference, specific analytes are spiked 0into a selected sample and a duplicate of that sample. At a minimum, the process is repeated for each matrix analyzed. The spike percent recoveries for the sample are determined. Low or elevated spike percent recoveries may indicate that a significant interference is affecting sample results for that particular matrix. MS samples that are analyzed as batch QC (i.e., not on the project samples) are not used to qualify data for matrix effects, but may be used to qualify data if an analytical problem is indicated.

- MS analyses were prepared and analyzed for total metals, mercury, TCLP herbicides, TCLP pesticides, TCLP metals, TCLP mercury, TCLP SVOA, TCLP VOA and TOX.
- MS analysis was not conducted for the O&G, true total barium, analyses used for CEC, EC, ESP and SAR determinations, sulfide, and cyanide.
- The metals MS analysis was conducted on SPL sample 03050225-01. The MSD recovery of zinc was slightly below SPL control limits, but the MS recovery was within control limits. No qualifications are placed on the zinc results. Post digestion spike recoveries were acceptable indicating a matrix effect. All other MS recoveries indicate acceptable accuracy.
- Mercury MS analysis was conducted on SPL sample 03050027-07. MS recoveries indicate acceptable accuracy.
- TCLP pesticide MS analysis was conducted on SPL sample 03050225-15. MS recoveries indicate acceptable accuracy.
- TCLP herbicide MS analysis was conducted on SPL sample 03050225-15. MS recoveries indicate acceptable accuracy.
- TCLP metals MS analysis was conducted on SPL sample 03050225-15. MS recoveries indicate acceptable accuracy.
- TCLP mercury MS analysis was conducted on SPL sample 03050225-15. MS recoveries indicate acceptable accuracy.
- TCLP SVOA MS analysis was conducted on SPL sample 03050225-15. MS recoveries indicate acceptable accuracy.
- TCLP VOA MS analysis was conducted on SPL sample 03050225-15. MS recoveries indicate acceptable accuracy.
- TOX MS analysis was conducted on SPL sample 03050243-01. MS recoveries indicate acceptable accuracy.

Sample Duplicate Analysis

Laboratory duplicate samples are analyzed to evaluate the precision of the sample results. Precision is measured as the relative percent difference (RPD) between analytical results for duplicate samples. The laboratory's failure to produce similar results for duplicate samples may indicate that the samples were non-homogeneous (particularly in soil samples), or that method defects may exist in the laboratory's techniques.

Metals spike duplicate analysis was conducted on SPL sample 03050225-01.
 Duplicate analysis RPDs indicated acceptable precision.

- Mercury spike duplicate analysis was conducted on SPL samples 03050027-07.
 Duplicate analysis RPDs indicated acceptable precision.
- True total barium sample duplicate analysis was conducted on SPL sample 03050346-01. Duplicate analysis RPDs indicated acceptable precision.
- The O&G sample duplicate analysis was conducted on samples 03050346-01 (batch R47684) and 03050225-01 (batch R47814). Duplicate analyses RPDs indicated acceptable precision for these batches.
- Moisture sample duplicate analysis was conducted on SPL sample 03050225-01.
 Duplicate analysis RPDs indicated acceptable precision.
- Sample duplicate analysis for pH was conducted on SPL sample 03050225-01.
 Duplicate analysis RPDs indicated acceptable precision
- Specific conductivity (EC) sample duplicate analysis was conducted on SPL sample 03050224-03. Duplicate analysis RPDs indicated acceptable precision.
- CEC sample duplicate analysis was conducted on SPL sample 03050224-03.
 Duplicate analysis RPDs indicated acceptable precision.
- ESP duplicate analysis was conducted on SPL sample 03050224-03. Duplicate analysis RPDs indicated acceptable precision.
- SAR duplicate analysis was conducted on SPL sample 03050224-03. Duplicate analysis RPDs indicated acceptable precision.
- TCLP pesticide spike duplicate analysis was conducted on SLP sample 03050225-15.
 Duplicate analysis RPDs indicated acceptable precision.
- TCLP herbicide spike duplicate analysis was conducted on SLP sample 03050225-15. Duplicate analysis RPDs indicated acceptable precision.
- TCLP metals duplicate analysis was conducted on SLP sample 03050225-15.
 Duplicate analysis RPDs indicated acceptable precision.
- TCLP mercury spike duplicate analysis was conducted on SLP sample 03050225-15. Duplicate analysis RPDs indicated acceptable precision.
- TCLP SVOA spike duplicate analysis was conducted on SLP sample 03050225-15.
 Duplicate analysis RPDs indicated acceptable precision.
- TCLP VOA spike duplicate analysis was conducted on SLP sample 03050225-15. Duplicate analysis RPDs indicated acceptable precision.
- Sulfide duplicate analysis was conducted on SLP sample 03050225-15. Duplicate

analysis RPDs indicated acceptable precision.

- Cyanide duplicate analysis was conducted on SPL sample 03050225-15. Duplicate analysis RPDs indicated acceptable precision.
- Ignitability duplicate analysis was conducted on SPL sample 03050225-15.
 Duplicate analysis RPDs indicated acceptable precision.
- TOX spike duplicate analysis was conducted on SPL sample 030502225-15.
 Duplicate analysis RPDs were outside of SPL control limits and the TOX result is considered to be an estimate.

Field Duplicate Sample Results

Field duplicate samples were collected and analyzed as an indication of overall precision for both field and laboratory. The results are expected to have more variability than laboratory duplicates, which measure only laboratory procedures. The QC criteria used to assess field duplicate samples for this project were limits of 70% RPD for soils. If both compounds were below the laboratory reporting limit or one of the compounds were present as a non-detect, then the compounds are generally not qualified due to field duplicate precision. There are no guidelines regarding data qualification based on poor field duplicate precision. Professional judgment was used to determine whether or not to qualify results.

• Sample DUPE 7 was a field replicate of sample 16-E-1004-C1-A. Duplicate RPDs for all parameters in both samples were acceptable.

Sample Reporting

Sample reporting was sufficient for verification of the sample and QC results reported. Batch numbers for O & G, pH and % moisture could not be verified from the data.

Calibration Checks

All calibration and calibration check sample results were acceptable. ICP interference check sample results were acceptable.

Other

- Surrogate recoveries for the sample and QC samples for TCLP pesticides, TCLP herbicides, TCLP SVOA and TCLP VOA were within SPL control limits indicating acceptable accuracy.
- TCLP metals analysis of sample 03050225-15 was conducted at a 5X dilution

resulting in raised reporting limits.

 TCLP VOA analysis of sample 03050225-15 was conducted at a 10X dilution resulting in raised reporting limits.

Appendix A

Glossary of Data Qualifier Codes

The following data qualifiers are used.

QUALIFIER MEANING

(NO CODE)

The analyte has been identified (and confirmed - organic analyses only).

All parameters

U

All parameters

The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit

UJ

All parameters

The analyte was analyzed for, but was not detected. The associated detection limit is an estimate and may be inaccurate or imprecise.

UL

All parameters

The analyte was not detected, and the reported quantitation limit is probably higher than reported.

В

Organic parameters

Analyte not detected ("U") at an elevated detection concentration. The elevated detection concentration is greater than normal due to a reported presence of the analyte in laboratory or field blanks.

R
All parameters

Data unreliable (unusable - inorganic parameters). The analyte may or may not be present.

N Organic parameters Analyte tentatively identified. Consider present. Additional sampling and/or special analytical considerations should be considered if further information is required.

NJ

Organic parameters

Analyte tentatively identified and presumptively present at approximate concentration reported. Qualitative identification questionable due to poor resolution.

QOrganic parameters

Analyte concentration determination not possible. Results usable qualitatively only. This qualifier is used with analytical results that fall between the sample detection limit and quantitation limit concentrations.

J All parameters Analyte present. The reported concentration may not be accurate or precise; therefore, assume that the concentration is estimated.

K
All parameters

Analyte present. The reported concentration may be biased high. The actual concentration is expected to be lower than reported.

L All parameters

Analyte present. The reported concentration may be biased low. The actual concentration is expected to be higher than reported.

Appendix B

Data Summary

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Soil/Sludge Samples Analyzed for LAC.43.XIX.313 (1) Parameters

JOP ID: 16-E-1003

					Parai	neters, Un	nits, and 313 ⁽	1) Regula	atory Lim	nits										
Sample ID	Area	Sample	Depth	Sample	pН	Arsenic	Chromium	Zinc	Oil/ Grease	Mercury	Barium, True Total	Lead	Cadmium	Silver	Selenium	Electrical Conductivity	Cation Exchange Capacity	Sodium Absorption Ratio	Exchangeable Sodium Percentage	Moisture
Sample 1D	Sampled		Inteval (feet)	Description	S.U.	mg/kg	mg/kg	mg/ kg	%	mg/kg	mg/kg	mg/ kg	mg/kg	mg/ kg	mg/kg	mmhos/cm	S.U.	S.U.	%	%
					6.0- 9.0	10	500	500	1	10	40000*/ 20000**	500	10	250	10	4*/8**	None	12*/14**	15*/25**	50
16E1003-C1-A	CONT1	5/3/2003	0 - 0.25	Sediment					1.7											39
16E1003-C1-B	CONT1	5/3/2003	0.08 - 1.5	Clay					0.221											16
16E1003-T1-A	CONT1	5/3/2003			7.37	2 U	3.07		15.4	0.095 U	244	69	1 U	1 U	2 U					91

Notes: (1) December 2001 revision of the September 1999 LAC.43.XIX.129.b.7

* Upland areas.

** Freshwater wetland areas not inundated.

U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: % = Percent

LAC = Louisiana Administrative Code. mg/kg = Milligram per kilogram. mmhos/cm = Millimhos per centimeter.

S.U. = Standard units.

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Samples Analyzed for TRPH and RCRA Ignitibility, Corrosivity, and Reactivity Characteristics

JOP ID: 16-E-1003

					Sample Description	on, Parameters, Unit	s, and RCRA Regulat	ory Limits		
Sample ID	Area Sampled	Sample Date	Depth Inteval (feet)	Sample Description	ТКРН	Moisture	Ignitability	Corrosivity	Reactive Cyanide	Reactive Sulfide
			(leet)		mg/kg	%	οF	S.U.	mg/kg	mg/kg
					none	none	140	500	250	500
16E1003-T1-A	TANK 1	5/3/2003				91	>150		1 U	8.5 U

Notes U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: % = Percent

RCRA = Resource Conservation and Recovery Act
TRPH = Total Recoverable Petroleum Hydrocarbon

mg/kg = Milligram per kilogram.

oF = Degrees Fahrenheit S.U. = Standard units

Louisiana Abandoned Oil Facility Database Summary of Analytical Resultsfor Samples Analyzed for RCRA Toxicity Characteristics - Metals

JOP ID: 16-E-1003

					Sample Descript	ion, CAS RN, and	RCRA Regulatory	Limits for TCLP-Me	tals (mg/L)			
Sample ID	Area Sampled	Sample Date	Depth Inteval (feet)	Sample Description	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
			(333)		7440-38-2	7440-39-3	7440-43-9	1333-82-0	7439-92-1	7439-97-6	7782-49-2	7440-22-4
					5	100	1	5	5	0.2	1	5
16E1003-T1-A	TANK 1	5/3/2003			0.200 U	16	0.100 U	0.100 U	0.200 U	0.0900 U	0.200 U	0.100 U

Notes U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: RCRA = Resource Conservation and Recovery Act

CAS RN = Chemical Abstract Service - Registry Number

TCLP = Toxicity Characteristic Leaching Proceedure

mg/L = Milligram per liter

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Samples Analyzed for RCRA Toxicity Characteristics - Volatiles

JOP ID: 16-E-1003

					Sample Descr	iption, CAS RN.	, and RCRA Regu	latory Limits for	· TCLP-Volatiles	s (mg/L)				
Sample ID	Area Sampled	Sample Date	Depth Inteval (feet)	Sample Description	Benzene	Carbon tetrachloride	Chlorobenzene	Chloroform	1, 2-Dichloro- ethane	1, 1- Dichloroethylene	Methyl ethyl ketone	Tetrachloro- ethylene	Trichloro- ethylene	Vinyl Chloride
			(leet)		71-43-2	56-23-5	108-90-7	67-66-3	107-06-2	75-35-4	78-93-3	127-18-4	79-01-6	75-01-4
					0.5	0.5	100	6	0.5	0.7	200	0.7	0.5	0.2
16E1003-T1-A	TANK 1	5/3/2003			65000 U	65000 U	65000 U	65000 U	65000 U	65000 U		65000 U	65000 U	130000 U

Notes U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: RCRA = Resource Conservation and Recovery Act

CAS RN = Chemical Abstract Service - Registry Number

TCLP = Toxicity Characteristic Leaching Proceedure

mg/L = Milligram per liter

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Samples Analyzed for RCRA Toxicity Characteristics - Semivolatiles

JOP ID: 16-E-1003

					Sample De	scription, C	AS RN, and	RCRA Regulator	ry Limits for To	CLP - Semivo	latiles (mg/L)						
Sample ID	Area Sampled	Sample Date	Depth Inteval	Sample Description	o-Cresol	m-Cresol	p-Cresol	1, 4-Dichloro- benzene	2, 4-Dinitro- toluene	Hexachloro - benzene	Hexachloro- butadiene	Hexachloro- ethane	Nitro- benzene	Penta- chloro- phenol	Pyridine	2, 4, 5- Trichloro- phenol	2, 4, 6- Trichloro- phenol
			(feet)		95-48-7	108-39-4	106-44-5	106-46-7	121-14-2	118-74-1	87-68-3	67-72-1	98-95-3	87-86-5	110-86-1	95-95-4	88-06-2
					200	200	200	7.5	0.13	0.13	0.5	3	2	100	5	400	2
16E1003-T1-A	TANK 1	5/3/2003			57	50 U		50 U	50 U	50 U	50 U	50 U	50 U	ND	50 U	50 U	50 U

Notes U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: RCRA = Resource Conservation and Recovery Act

CAS RN = Chemical Abstract Service - Registry Number

TCLP = Toxicity Characteristic Leaching Proceedure

mg/L = Milligram per liter

Louisiana Abandoned Oil Facility Database Summary of Analytical Results for Samples Analyzed for RCRA Toxicity Characteristics - Pesticides and Herbicides

JOP ID: 16-E-1003

					Sample Descrip	otion, CAS RN,	and RCRA Regula	ntory Limits for	TCLP - Pesticides	and Herbicides (mg/	L)		
Sample ID	Area Sampled	Sample Date	Depth Inteval (feet)	Sample Description	Chlordane	Endrin	Heptachlor	Heptachlor Epoxide	Toxaphene	Methoxychlor	Lindane	2, 4-D	2, 4, 5-TP (Silvex)
	(teet)		57-74-9	72-20-8	76-44-8	76-44-8	8001-35-2	72-43-5	58-89-9	94-75-7	93-76-5		
					0.03	0.02	0.008	0.008	0.5	10	0.4	10	1
16E1003-T1-A	TANK 1	5/3/2003			2 U	0.5 U	0.5 U	0.5 U	50 U	0.5 U		10 U	1 U

Notes U = The analyte was analyzed for, but was not detected above the associated concentration, which is either the sample quantitation limit or the sample detection limit.

Key: RCRA = Resource Conservation and Recovery Act

CAS RN = Chemical Abstract Service - Registry Number

TCLP = Toxicity Characteristic Leaching Proceedure

mg/L = Milligram per liter

Appendix C

Supporting Documentation Includes:

Table I
Copies of Laboratory Case Narrative(s),

Sample Traffic Report(s), and

Chain(s) of Custody



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

Certificate of Analysis Number:

03050225

Report To: Project Name: 001702.CU.03

ECOLOGY & ENVIRONMENT, INC Site: 1Q03

Justin Farrell

11550 Newcastle Ave.

Suite 250

Baton Rouge

LA

70816-

ph (225) 298-5080

fax:

PO Number:

Site Address:

State: Louisiana

State Cert. No.:

Date Reported:

This Report Contains A Total Of 55 Pages

Excluding This Page



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Case Narrative for: ECOLOGY & ENVIRONMENT, INC

Certificate of Analysis Number:

03050225

Report To:	Project Name: 001702.CU.03
ECOLOGY & ENVIRONMENT, INC	<u>Site:</u> 1Q03
Justin Farrell	Site Address:
11550 Newcastle Ave.	
Suite 250	DO Number
Baton Rouge	PO Number:
LA	State: Louisiana
70816-	State Cert. No.:
ph (225) 298-5080 fax:	Date Reported:

Prep Comments for PR3510_TCLP_8081, Sample 03050225-15D: The prep HoldTime was exceeded by 6 days. Prep Comments for PR3510_TCLP_8081, Sample 03050225-15D: The prep HoldTime was exceeded by 6 days. Prep Comments for PR3510_TCLP_8270, Sample 03050225-15D: The prep HoldTime was exceeded by 6 days. Prep Comments for PR3510_TCLP_8270, Sample 03050225-15D: The prep HoldTime was exceeded by 6 days. Prep Comments for PR3510_TCLP_8151, Sample 03050225-15D: The prep HoldTime was exceeded by 10 days. Prep Comments for PR3510_TCLP_8151, Sample 03050225-15D: The prep HoldTime was exceeded by 10 days.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER	OF PAGES IN THIS REPORT:	PAGES

Jan Dalin

5/28/2003

John D Trahan Project Manager



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

001702.CU.03

1Q03

ECOLOGY & ENVIRONMENT, INC

Certificate of Analysis Number:

03050225

ECOLOGY & ENVIRONMENT, INC Report To:

Justin Farrell

11550 Newcastle Ave.

Suite 250

Baton Rouge

LA 70816-

ph (225) 298-5080 fax: (225) 298-5081 PO Number:

Project Name:

Site Address:

Site:

Louisiana State:

State Cert. No.:

Fax To: **Date Reported:**

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
43-E-1001-P1-A	03050225-01	Soil	5/2/2003 12:15:00 PM	5/5/2003 2:20:00 PM	135591,135589	
43-E-1001-P1-B	03050225-02	Soil	5/2/2003 12:15:00 PM	5/5/2003 2:20:00 PM	135591,135589	
41-E-1001-C1-A	03050225-03	Soil	5/2/2003 3:30:00 PM	5/5/2003 2:20:00 PM	135591,135589	
43-E-1002-C1-B	03050225-04	Soil	5/2/2003 1:45:00 PM	5/5/2003 2:20:00 PM	135591,135589	
43-E-1002-C1-A	03050225-05	Soil	5/2/2003 1:45:00 PM	5/5/2003 2:20:00 PM	135591,135589	
43-E-1001-C1-A	03050225-06	Soil	5/2/2003 12:45:00 PM	5/5/2003 2:20:00 PM	135591,135589	
43-E-1001-C1-B	03050225-07	Soil	5/2/2003 12:45:00 PM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1004-C1-A	03050225-08	Soil	5/3/2003 11:15:00 AM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1004-M1-A	03050225-09	Soil	5/3/2003 12:35:00 PM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1004-M1-B	03050225-10	Soil	5/3/2003 12:35:00 PM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1004-M2-A	03050225-11	Soil	5/3/2003 1:15:00 PM	5/5/2003 2:20:00 PM	135591,135589	
DUPE-7	03050225-12	Soil	5/3/2003	5/5/2003 2:20:00 PM	135591,135589	
16-E-1004-0A1-A	03050225-13	Soil	5/3/2003 12:15:00 PM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1003-C1-B	03050225-14	Soil	5/3/2003 8:20:00 AM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1003-T1-A	03050225-15	Soil	5/3/2003 9:00:00 AM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1005-C1-A	03050225-16	Soil	5/3/2003 1:55:00 PM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1004-0A1-B	03050225-17	Soil	5/3/2003 12:15:00 PM	5/5/2003 2:20:00 PM	135591,135589	
16-E-1003-C1-A	03050225-18	Soil	5/3/2003 8:20:00 AM	5/5/2003 2:20:00 PM	135591,135589	

2 Dollar

5/28/2003

Date

John D Trahan Project Manager

> Ron Benjamin **Laboratory Director**

Tristan Davis **Quality Assurance Officer**



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Client Sample ID: 16-E-1003-C1-B Collected: 05/03/2003 8:20 SPL Sample ID: 03050225-14

Site: 1Q03

Analyses/Method	Result	Rep.Limit		Dil. Factor QUAL	Date Analyzed Analyst	Seq. #
OIL AND GREASE, SOXHLETA	/GRAVIMETRIC		MCL	3540C	Units: %	
Oil & Grease	0.221	0.0100		1	05/13/03 14:00 GJH	702348
PERCENT MOISTURE			MCL	D2216	Units: wt%	
Percent Moisture	16	0.10		1	05/12/03 11:35 JT	698962

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Client Sample ID: 16-E-1003-T1-A Collected: 05/03/2003 9:00 SPL Sample ID: 03050225-15

Analyses/Method IGNITABILITY-LIQUID	Result	F	Rep.Limit		5 : E					
			top.Limit		DII. F	actor	QUAL	Date Analyzed	Analyst	Seq. #
lanitability				MCL		SV	V1010	Units: °F	•	
Ignitability	>150		0			1		05/14/03 13:00	GJH	702290
MERCURY, TOTAL BY C	OLD VAPOR			MCL		SW	7471A	Units: m	g/Kg	
Mercury	ND		0.095			1		05/08/03 12:41		695005
Prep Method	Prep Date		Prep Initials							
SW7471A	05/08/2003 9:16		PRR							
OIL AND GREASE, SOXH	HLET/GRAVIMETRIC			MCL		3	3540C	Units: %)	
Oil & Grease	15.4		0.0100			1		05/13/03 14:00	GJH	702349
PERCENT MOISTURE				MCL		-	D2216	Units: w	t%	
Percent Moisture	91		0.10	_		1		05/12/03 11:35	JT	698963
PH- ON SOIL				MCL		SWS	9045C	Units: S	td Units	
рН	7.37		1.00			1		05/12/03 14:00	DB	698621
REACTIVE CYANIDE				MCL		SW7	. 3.3.2	Units: m	a/Ka	
Reactive Cyanide	ND		1			1		05/14/03 9:00		701703
REACTIVE SULFIDE				MCL		SW7	. 3.4.2	Units: m	a/Ka	
Reactive Sulfide	ND		8.5	500		1		05/14/03 9:00		701694
TCLP CHLORINATED HE	RBICIDES			MCL		SW8	3151A	Units: u	q/L	
2,4,5-TP (Silvex)	ND		1			1		05/25/03 2:14	RB	714105
2,4-D	ND		10			1		05/25/03 2:14	RB	714105
Surr: DCAA	63.4	%	40-130			1		05/25/03 2:14	RB	714105
Prep Method	Prep Date		Prep Initials	I each M	ethod	1	_eachate	. Date	Leach I	nitials
	05/20/2003 8:50		COM	SW1311			05/15/20	•	MHW	
TCLP MERCURY				MCL		SW	7470A	Units: m	ıa/l	<u> </u>
Mercury	ND		0.0900	0.2		1	11.07.	01/01/00 14:11		705262
Door Mathead	Davis Data		December 1		- (ll			D-1-	1	-90-1-
	Prep Date 05/16/2003 9:46			Leach M			_eachate 05/15/20		Leach I	nitiais_
3W7470A	05/16/2003 9.46		FKK	SW1311			J3/ T3/20	03 0.15	IVIIIVV	
TCLP METALS BY METH				MCL			6010B	Units: m		
Arsenic	ND		0.200	5		5		05/16/03 11:24		715923
Barium	16		0.250	100		5		05/16/03 11:24		715923
Cadmium	ND		0.100	1		5		05/16/03 11:24		715923
Chromium	ND		0.100	5		5		05/16/03 11:24		715923
Lead	ND		0.200	5		5		05/16/03 11:24		715923
Selenium	ND		0.200	1		5		05/16/03 11:24		715923
Silver	ND		0.100	5		5		05/16/03 11:24	MNM	715923

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Client Sample ID: 16-E-1003-T1-A **Collected:** 05/03/2003 9:00 **SPL Sample ID:** 03050225-15

Site: 1Q03

Analy	ses/Method	Result F	Rep.Limit	MCL Dil. Facto	or QUAL	Date Analyzed A	nalyst Se	q. #
	Prep Method	Prep Date	Prep Initials	Leach Method	Leachate	<u>Date</u>	Leach Initials	
	SW3010A	05/15/2003 16:45	RJ	SW1311	05/15/200	3 0:15	MHW	

TCLP ORGANOCHLORINE PESTICIDES		MCL	SW8081	Units: ug/L			
Chlordane	ND	2	2	1	05/18/03 21:51	RB	707348
Endrin	ND	0.5	0.5	1	05/18/03 21:51	RB	707348
gamma-BHC	ND	0.5	0.5	1	05/18/03 21:51	RB	707348
Heptachlor	ND	0.5	0.5	1	05/18/03 21:51	RB	707348
Heptachlor epoxide	ND	0.5	0.5	1	05/18/03 21:51	RB	707348
Methoxychlor	ND	0.5	0.5	1	05/18/03 21:51	RB	707348
Toxaphene	ND	50	50	1	05/18/03 21:51	RB	707348
Surr: Decachlorobiphenyl	77.6	% 16-107		1	05/18/03 21:51	RB	707348
Surr: Tetrachloro-m-xylene	64.7	% 64-94		1	05/18/03 21:51	RB	707348

Prep Method	Prep Date	Prep Initials	Leach Method	Leachate Date	Leach Initials
SW3510B	05/16/2003 14:50	СОМ	SW1311	05/15/2003 0:15	MHW

TCLP SEMIVOLATILE ORGANICS				MCL	SW8270C	Units: นดู	g/L	
1,4-Dichlorobenzene	ND		50	7500	1	05/20/03 14:25	LMK	709174
2,4,5-Trichlorophenol	ND		50	400000	1	05/20/03 14:25	LMK	709174
2,4,6-Trichlorophenol	ND		50	2000	1	05/20/03 14:25	LMK	709174
2,4-Dinitrotoluene	ND		50	130	1	05/20/03 14:25	LMK	709174
Hexachlorobenzene	ND		50	130	1	05/20/03 14:25	LMK	709174
Hexachlorobutadiene	ND		50	500	1	05/20/03 14:25	LMK	709174
Hexachloroethane	ND		50	3000	1	05/20/03 14:25	LMK	709174
m,p-Cresols	ND		50	200000	1	05/20/03 14:25	LMK	709174
Nitrobenzene	ND		50	2000	1	05/20/03 14:25	LMK	709174
o-Cresol	57		50	200000	1	05/20/03 14:25	LMK	709174
Pentachlorophenol	ND		200	100000	1	05/20/03 14:25	LMK	709174
Pyridine	ND		50	5000	1	05/20/03 14:25	LMK	709174
Surr: 1,2-Dichlorobenzene-d4	73.4	%	16-110		1	05/20/03 14:25	LMK	709174
Surr: 2,4,6-Tribromophenol	69.9	%	10-123		1	05/20/03 14:25	LMK	709174
Surr: 2-Chlorophenol-d4	66.2	%	33-110		1	05/20/03 14:25	LMK	709174
Surr: 2-Fluorobiphenyl	67.4	%	43-116		1	05/20/03 14:25	LMK	709174
Surr: 2-Fluorophenol	55.8	%	21-110		1	05/20/03 14:25	LMK	709174
Surr: 4-Terphenyl-d14	52.5	%	33-141		1	05/20/03 14:25	LMK	709174
Surr: Nitrobenzene-d5	65.9	%	35-114		1	05/20/03 14:25	LMK	709174
Surr: Phenol-d5	51.1	%	10-110		1	05/20/03 14:25	LMK	709174

Prep Method	Prep Date	Prep Initials	Leach Method	Leachate Date	Leach Initials
SW3510B	05/16/2003 15:40	COM	SW1311	05/15/2003 0:15	MHW

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Client Sample ID: 16-E-1003-T1-A **Collected:** 05/03/2003 9:00 **SPL Sample ID:** 03050225-15

Site: 1Q03

Analyses/Method	Result	Rep.Limit	MCL	Dil. Factor QUAL	Date Analyzed Analyst	Seq. #
TCLP VOLATILE ORGANICS			MCL	SW8260B	Units: μg/L	
1,1-Dichloroethene	ND	65000	700	10	05/20/03 16:07 BM	709178
1,2-Dichloroethane	ND	65000	500	10	05/20/03 16:07 BM	709178
2-Butanone	ND	130000	200000	10	05/20/03 16:07 BM	709178
Benzene	ND	65000	500	10	05/20/03 16:07 BM	709178
Carbon tetrachloride	ND	65000	500	10	05/20/03 16:07 BM	709178
Chlorobenzene	ND	65000	100000	10	05/20/03 16:07 BM	709178
Chloroform	ND	65000	6000	10	05/20/03 16:07 BM	709178
Tetrachloroethene	ND	65000	700	10	05/20/03 16:07 BM	709178
Trichloroethene	ND	65000	500	10	05/20/03 16:07 BM	709178
Vinyl chloride	ND	130000	200	10	05/20/03 16:07 BM	709178
Surr: 1,2-Dichloroethane-d4	100	% 80-120		10	05/20/03 16:07 BM	709178
Surr: 4-Bromofluorobenzene	99.6	% 86-115		10	05/20/03 16:07 BM	709178
Surr: Toluene-d8	98.4	% 88-110		10	05/20/03 16:07 BM	709178

Leach Method	Leachate Date	Leach Initials
SW1311	05/15/2003 0:15	MHW

TOTAL METALS BY MET	HOD 6010B		MCL	SW6010B	Units: mg/Kg	
Arsenic	ND	2		1	05/09/03 18:49 MNM	698048
Barium	244	1		1	05/09/03 18:49 MNM	698048
Cadmium	ND	1		1	05/09/03 18:49 MNM	698048
Chromium	3.07	1		1	05/09/03 18:49 MNM	698048
Lead	69	1		1	05/09/03 18:49 MNM	698048
Selenium	ND	2		1	05/09/03 18:49 MNM	698048
Silver	ND	1		1	05/09/03 18:49 MNM	698048

Prep Method	Prep Date	Prep Initials
SW3050B	05/08/2003 11:00	AG

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Client Sample ID: 16-E-1003-C1-A Collected: 05/03/2003 8:20 SPL Sample ID: 03050225-18

Site: 1Q03

Analyses/Method	Result	Rep.Limit		Dil. Factor QUAL	Date Analyzed Analyst	Seq. #
OIL AND GREASE, SOXHLET	/GRAVIMETRIC		MCL	3540C	Units: %	
Oil & Grease	1.7	0.0100		1	05/13/03 14:00 GJH	702352
PERCENT MOISTURE			MCL	D2216	Units: wt%	
Percent Moisture	39	0.10		1	05/12/03 11:35 JT	698966

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

Quality Control Documentation



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: PERCENT MOISTURE WorkOrder: 03050225 Method: D2216 Lab Batch ID: R47591

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
03050225-01A	43-E-1001-P1-A
03050225-02A	43-E-1001-P1-B
03050225-03A	41-E-1001-C1-A
03050225-04A	43-E-1002-C1-B
03050225-05A	43-E-1002-C1-A
03050225-06A	43-E-1001-C1-A
03050225-07A	43-E-1001-C1-B
03050225-08A	16-E-1004-C1-A
03050225-09A	16-E-1004-M1-A
03050225-10A	16-E-1004-M1-B
03050225-11A	16-E-1004-M2-A
03050225-12A	DUPE-7
03050225-13A	16-E-1004-0A1-A
03050225-14A	16-E-1003-C1-B
03050225-15A	16-E-1003-T1-A
03050225-16A	16-E-1005-C1-A
03050225-17A	16-E-1004-0A1-B
03050225-18A	16-E-1003-C1-A

Sample Duplicate

Original Sample: 03050225-01

MOISTURE_030512E-6989 Units: RunID: wt% Analysis Date: 05/12/2003 11:35 Analyst: JT

Analyte	Sample	DUP	RPD	RPD
	Result	Result		Limit
Percent Moisture	20	19.2	3	20

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

MI - Matrix Interference

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution * - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583

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ECOLOGY & ENVIRONMENT, INC

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Analysis: **TCLP Organochlorine Pesticides** WorkOrder: 03050225 Method: SW8081 Lab Batch ID: 16614

Method Blank

Samples in Analytical Batch:

VAR1_030518C-707346 RunID: Units: ug/L Analysis Date: 05/18/2003 20:53 Analyst: RB

Lab Sample ID **Client Sample ID** 03050225-15D 16-E-1003-T1-A

Preparation Date: 05/16/2003 14:50 Prep By: COM Method SW3510B

Analyte	Result	Rep Limit
Chlordane	ND	2.0
Endrin	ND	0.50
gamma-BHC	ND	0.50
Heptachlor	ND	0.50
Heptachlor epoxide	ND	0.50
Methoxychlor	ND	0.50
Toxaphene	ND	50
Surr: Decachlorobiphenyl	86.2	67-104
Surr: Tetrachloro-m-xylene	70.5	60-105

Laboratory Control Sample (LCS)

RunID: VAR1_030518C-707347 Units: ug/L 05/18/2003 21:22 Analyst: RB Analysis Date:

Preparation Date: 05/16/2003 14:50 Prep By: COM Method SW3510B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Endrin	5	5.44	109	30	147
gamma-BHC	5	3.74	75	32	127
Heptachlor	5	3.85	77	34	130
Heptachlor epoxide	5	4.06	81	37	142
Methoxychlor	5	4.63	93	30	147

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03050225-15

RunID: VAR1_030518C-707349 Units: ug/L Analyst: RB Analysis Date: 05/18/2003 22:20

Preparation Date: 05/16/2003 14:50 Prep By: COM Method SW3510B Leach Date: 05/15/2003 0:15 Leach By MH Method SW1311

Analyte	Sample	MS	MS	MS %	MSD	MSD	MSD %	RPD	RPD	Low	High
	Result	Spike	Result	Recovery	Spike	Result	Recovery		Limit	Limit	Limit
		Added			Added						
Endrin	ND	5	5.33	107	5	4.92	98.4	7.96	30	30	147
gamma-BHC	ND	5	3.91	78.2	5	3.82	76.4	2.25	30	32	127
Heptachlor	ND	5	3.93	78.6	5	3.65	72.9	7.56	30	34	130

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: **TCLP Organochlorine Pesticides** WorkOrder: 03050225 Method: Lab Batch ID: SW8081 16614

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03050225-15

VAR1_030518C-707349 RunID: Units: ug/L Analysis Date: 05/18/2003 22:20 Analyst: RB

Preparation Date: 05/16/2003 14:50 Prep By: COM Method SW3510B Leach Date: 05/15/2003 0:15 Leach By MH Method SW1311

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Heptachlor epoxide	ND	5	4.65	93.1	5	4.36	87.1	6.60	30	37	142
Methoxychlor	ND	5	5.88	118	5	5.2	104	12.3	30	30	147

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

MI - Matrix Interference

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution * - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



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ECOLOGY & ENVIRONMENT, INC

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Analysis: TCLP Chlorinated Herbicides WorkOrder: 03050225

Method: SW8151A Lab Batch ID: 16703

Method Blank

Samples in Analytical Batch:

 RunID:
 PEST_030525A-714103
 Units:
 ug/L

 Analysis Date:
 05/25/2003 0:53
 Analyst:
 RB

 Lab Sample ID
 Client Sample ID

 03050225-15D
 16-E-1003-T1-A

Preparation Date: 05/20/2003 8:50 Prep By: COM Method SW3510B

Analyte	Result	Rep Limit
2,4,5-TP (Silvex)	ND	1.0
2,4-D	ND	10
Surr: DCAA	67.2	40-130

Laboratory Control Sample (LCS)

RunID: PEST_030525A-714104 Units: ug/L Analysis Date: 05/25/2003 1:33 Analyst: RB

Preparation Date: 05/20/2003 8:50 Prep By: COM Method SW3510B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
2,4,5-TP (Silvex)	6	6.1	102	22	175
2,4-D	60	55.8	93	20	175

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03050225-15

 RunID:
 PEST_030525A-714106
 Units:
 ug/L

 Analysis Date:
 05/25/2003 2:54
 Analyst:
 RB

Preparation Date: 05/20/2003 8:50 Prep By: COM Method SW3510B

Analyte	Sample	MS	MS	MS %	MSD	MSD	MSD %	RPD	RPD	Low	High
	Result	Spike	Result	Recovery	Spike	Result	Recovery		Limit	Limit	Limit
		Added			Added						1
2,4,5-TP (Silvex)	ND	6	6.81	113	6	5.7	95.0	17.7	30	22	175
2,4-D	ND	60	61.9	103	60	54.9	91.6	11.9	30	20	175

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



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Analysis: Mercury, Total by Cold Vapor WorkOrder: 03050225
Method: SW7471A Lab Batch ID: 16342

Method Blank

Samples in Analytical Batch:

RunID: FIMS-100_030508A-694990 Units: mg/kg
Analysis Date: 05/08/2003 11:50 Analyst: PRR

 Lab Sample ID
 Client Sample ID

 03050225-01A
 43-E-1001-P1-A

03050225-15A 16-E-1003-T1-A

Analyte	Result	Rep Limit
Mercury	ND	0.1

Laboratory Control Sample (LCS)

RunID: FIMS-100_030508A-694991 Units: mg/kg
Analysis Date: 05/08/2003 11:53 Analyst: PRR

Preparation Date: 05/08/2003 9:16 Prep By: PRR Method SW7471A

Analyte	Spik Add		Percent Recovery	Lower Limit	Upper Limit
Mercury	8	3.31 8.747	105	61.9	138

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03050027-07

RunID: FIMS-100_030508A-694993 Units: mg/kg
Analysis Date: 05/08/2003 11:59 Analyst: PRR

Preparation Date: 05/08/2003 9:16 Prep By: PRR Method SW7471A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mercury	ND	1.5	1.482	96.53	1.5	1.459	94.99	1.577	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: Mercury, Total by Cold Vapor WorkOrder: 03050225

Method: SW7471A Lab Batch ID: 16342

Method Blank

Samples in Analytical Batch:

RunID: FIMS-100_030508A-694990 Units: mg/kg
Analysis Date: 05/08/2003 11:50 Analyst: PRR

 Lab Sample ID
 Client Sample ID

 03050225-01A
 43-E-1001-P1-A

 03050225-15A
 16-E-1003-T1-A

Analyte	Result	Rep Limit
Mercury	ND	0.1

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03050027-07

RunID: FIMS-100_030508A-694993 Units: mg/kg
Analysis Date: 05/08/2003 11:59 Analyst: PRR

Preparation Date: 05/08/2003 9:16 Prep By: PRR Method SW7471A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mercury	ND			96.53		1.459	94.99	1.577	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

MI - Matrix Interference

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



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Analysis: Total Metals by Method 6010B WorkOrder: 03050225

Method: SW6010B Lab Batch ID: 16353

Method Blank

Samples in Analytical Batch:

ICP2_030509A-698036 RunID: Units: mg/kg Lab Sample ID Client Sample ID Analysis Date: 05/09/2003 16:27 Analyst: MNM 03050225-01A 43-E-1001-P1-A Preparation Date: 05/08/2003 11:00 Prep By: AG Method SW3050B 03050225-15A 16-E-1003-T1-A

Analyte	Result	Rep Limit
Arsenic	ND	2
Barium	ND	1
Cadmium	ND	1
Chromium	ND	1
Lead	ND	1
Selenium	ND	2
Silver	ND	1
Zinc	ND	2

Laboratory Control Sample (LCS)

RunID: ICP2_030509A-698037 Units: mg/kg Analysis Date: 05/09/2003 16:39 Analyst: MNM

Preparation Date: 05/08/2003 11:00 Prep By: AG Method SW3050B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Arsenic	146	125.8	86	78.8	122
Barium	140	116.3	83	77.9	122
Cadmium	244	207.9	85	80.3	120
Chromium	99.2	85.75	86	78.5	121
Lead	72.8	59.84	82	79.9	120
Selenium	86.5	74.59	86	69.1	131
Silver	126	112.3	89	60.3	140
Zinc	138	111.3	81	77.5	122

Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Sample Spiked: 03050225-01

RunID: ICP2_030509A-698044 Units: mg/kg
Analysis Date: 05/09/2003 18:02 Analyst: MNM

Analyte	Sample Result	PDS Spike	PDS Result	PDS % Recovery	PDSD Spike	PDSD Result	PDSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
	Nesuit	Added	Nesuit	Recovery	Added	Nesuit	Recovery		LIIIII	LIIIII	
Zinc	40.7	100	130.8	90.13	100	129.6	88.90	0.9439	20	75	125

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

03050225

WorkOrder:

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: Total Metals by Method 6010B

Method: Lab Batch ID: SW6010B 16353

> Sample Spiked: 03050225-01

ICP2_030509A-698040 RunID: Units: mg/kg Analysis Date: 05/09/2003 17:14 Analyst: MNM

Preparation Date: 05/08/2003 11:00 Prep By: AG Method SW3050B

Analyte	Sample	MS	MS	MS %	MSD	MSD	MSD %	RPD	RPD	Low	High
	Result	Spike	Result	Recovery	Spike	Result	Recovery		Limit	Limit	Limit
		Added			Added						
Arsenic	4.898	100	93.46	88.56	100	94.23	89.33	0.8222	20	75	125
Barium	73.70	100	153.1	79.42	100	152.8	79.11	0.2010	20	75	125
Cadmium	ND	100	81.82	81.82	100	85.24	85.24	4.098	20	75	125
Chromium	7.641	100	93.33	85.69	100	94.89	87.25	1.660	20	75	125
Lead	25.14	100	108.3	83.12	100	107.3	82.20	0.8541	20	75	125
Selenium	ND	100	82.38	82.38	100	83.61	83.61	1.480	20	75	125
Silver	ND	100	80.79	80.79	100	85.85	85.85	6.073	20	75	125
Zinc	40.69	100	122.4	81.71	100	114.1	73.39 *	7.042	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

MI - Matrix Interference

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution * - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Client Sample ID

ECOLOGY & ENVIRONMENT, INC

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 Analysis:
 TCLP Metals by Method 6010B
 WorkOrder:
 03050225

 Method:
 SW6010B
 Lab Batch ID:
 16576

Method Blank

Samples in Analytical Batch:

Lab Sample ID

RunID: ICP2_030516B-715921 Units: mg/L

Analysis Date: 05/16/2003 11:06 Analyst: MNM

03050225-15D 16-E-1003-T1-A

Preparation Date: 05/15/2003 16:45 Prep By: RJ Method SW3010A

Analyte	Result	Rep Limit
Arsenic	ND	0.2
Barium	ND	0.25
Cadmium	ND	0.1
Chromium	ND	0.1
Lead	ND	0.2
Selenium	ND	0.2
Silver	ND	0.1

Laboratory Control Sample (LCS)

RunID: ICP2_030516B-715922 Units: mg/L Analysis Date: 05/16/2003 11:14 Analyst: MNM

Preparation Date: 05/15/2003 16:45 Prep By: RJ Method SW3010A

	Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Arsenic		10	9.556	96	80	120
Barium		10	9.434	94	80	120
Cadmium		10	9.91	99	80	120
Chromium		10	9.535	95	80	120
Lead		10	9.252	93	80	120
Selenium		10	9.878	99	80	120
Silver		10	9.566	96	80	120

Sample Duplicate

Original Sample: 03050225-15

RunID: ICP2_030516B-715923 Units: mg/L Analysis Date: 05/16/2003 11:24 Analyst: MNM

Analyte	Sample	DUP	RPD	RPD
	Result	Result		Limit
Arsenic	ND	ND	0	20
Barium	16	14.41	10	20
Cadmium	ND	ND	0	20
Chromium	ND	ND	0	20
Lead	ND	ND	0	20
Selenium	ND	ND	0	20

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

 Analysis:
 TCLP Metals by Method 6010B
 WorkOrder:
 03050225

 Method:
 SW6010B
 Lab Batch ID:
 16576

Sample Duplicate

Original Sample: 03050225-15

RunID: ICP2_030516B-715923 Units: mg/L Analysis Date: 05/16/2003 11:24 Analyst: MNM

 Preparation Date:
 05/15/2003 16:45
 Prep By:
 RJ
 Method SW3010A

 Leach Date:
 05/15/2003 0:15
 Leach By MH
 Method SW1311

Analyte	Sample	DUP	RPD	RPD
	Result	Result		Limit
Silver	ND	ND	0	20

Post Digestion Spike (PDS)

Sample Spiked: 03050225-15

RunID: ICP2_030516B-715926 Units: mg/L Analysis Date: 05/16/2003 11:51 Analyst: MNM

Analyt	e	Sample Result	PDS Spike Added	PDS Result	PDS % Recovery	Low Limit	High Limit
Arsenic		ND	5	5.424	105.6	75	125
Barium		16	5	21.11	102.0	75	125
Cadmium		ND	5	4.873	97.45	75	125
Chromium		ND	5	4.936	98.47	75	125
Lead		ND	5	4.974	98.02	75	125
Selenium		ND	5	5.222	103.2	75	125
Silver		ND	5	4.901	97.84	75	125

Matrix Spike (MS)

Sample Spiked: 03050225-15

RunID: ICP2_030516B-715925 Units: mg/L Analysis Date: 05/16/2003 11:42 Analyst: MNM

Preparation Date: 05/15/2003 16:45 Prep By: RJ Method SW3010A

Analyte	Sample	Spike	MS Result	MS %	Low	High
	Result	Added		Recovery	Limit	Limit
Arsenic	ND	10	9.34	91.95	75	125
Barium	16.01	10	26.23	102.2	75	125
Cadmium	ND	10	9.645	96.45	75	125
Chromium	ND	10	9.384	93.72	75	125
Lead	ND	10	9.098	90.25	75	125
Selenium	ND	10	9.66	95.97	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: TCLP Metals by Method 6010B WorkOrder: 03050225 Method: Lab Batch ID: SW6010B 16576

Matrix Spike (MS)

03050225-15 Sample Spiked:

RunID: ICP2_030516B-715925 Units: mg/L Analysis Date: 05/16/2003 11:42 Analyst: MNM

Preparation Date: 05/15/2003 16:45 Prep By: RJ Method SW3010A

Analyte	Sample Result	Spike Added	MS Result	MS % Recovery	Low Limit	High Limit
Silver	ND	10	9.35	93.41	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution * - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

 Analysis:
 TCLP Mercury
 WorkOrder:
 03050225

 Method:
 SW7470A
 Lab Batch ID:
 16593

Method Blank

Samples in Analytical Batch:

RunID: FIMS-100_030516A-705260 Units: mg/L
Analysis Date: 01/01/1900 14:05 Analyst: PRR

 Lab Sample ID
 Client Sample ID

 03050225-15D
 16-E-1003-T1-A

Preparation Date: 05/16/2003 9:46 Prep By: PRR Method SW7470A

Analyte	Result	Rep Limit
Mercury	ND	0.003

Laboratory Control Sample (LCS)

RunID: FIMS-100_030516A-705261 Units: mg/L Analysis Date: 01/01/1900 14:08 Analyst: PRR

Preparation Date: 05/16/2003 9:46 Prep By: PRR Method SW7470A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Mercury	0.3	0.3198	107	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03050225-15

RunID: FIMS-100_030516A-705263 Units: mg/L Analysis Date: 01/01/1900 14:14 Analyst: PRR

Preparation Date: 05/16/2003 9:46 Prep By: PRR Method SW7470A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mercury	ND	0.3	0.3279	109.3	0.3	0.318	106.0	3.056	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: TCLP Semivolatile Organics WorkOrder: 03050225

Method: SW8270C Lab Batch ID: 16618

Method Blank

Samples in Analytical Batch:

RunID: A_030520A-709172 Units: ug/L Analysis Date: 05/20/2003 12:47 Analyst: LMK

 Lab Sample ID
 Client Sample ID

 03050225-15D
 16-E-1003-T1-A

Preparation Date: 05/16/2003 15:40 Prep By: COM Method SW3510B

Analyte	Result	Rep Limit
1,4-Dichlorobenzene	ND	5.0
2,4,5-Trichlorophenol	ND	5.0
2,4,6-Trichlorophenol	ND	5.0
2,4-Dinitrotoluene	ND	5.0
Hexachlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Hexachloroethane	ND	5.0
m,p-Cresols	ND	5.0
Nitrobenzene	ND	5.0
o-Cresol	ND	5.0
Pentachlorophenol	ND	20
Pyridine	ND	5.0
Surr: 1,2-Dichlorobenzene-d4	56.9	16-110
Surr: 2,4,6-Tribromophenol	65.5	10-123
Surr: 2-Chlorophenol-d4	51.1	33-110
Surr: 2-Fluorobiphenyl	58.1	43-116
Surr: 2-Fluorophenol	44.7	21-110
Surr: 4-Terphenyl-d14	76.5	33-141
Surr: Nitrobenzene-d5	53.6	35-114
Surr: Phenol-d5	43.1	10-110

Laboratory Control Sample (LCS)

RunID: A_030520A-709173 Units: ug/L Analysis Date: 05/20/2003 13:36 Analyst: LMK

Preparation Date: 05/16/2003 15:40 Prep By: COM Method SW3510B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,4-Dichlorobenzene	130	88.9	68	20	124
2,4,5-Trichlorophenol	800	486	61	43	117
2,4,6-Trichlorophenol	800	464	58	14	176
2,4-Dinitrotoluene	130	80.7	62	39	139
Hexachlorobenzene	130	101	77	5	152
Hexachlorobutadiene	130	94.3	73	24	116
Hexachloroethane	130	87.4	67	32	113
m,p-Cresols	1600	1040	65	27	112
Nitrobenzene	130	89.3	69	35	180
o-Cresol	800	545	68	31	110
Pentachlorophenol	800	507	63	14	176
Pyridine	1300	81.2	6	0	141

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: TCLP Semivolatile Organics

Method: SW8270C

WorkOrder: 03050225 Lab Batch ID: 16618

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03050225-15

RunID: A_030520A-709175 Units: ug/L Analysis Date: 05/20/2003 15:14 Analyst: LMK

Preparation Date: 05/16/2003 15:40 Prep By: COM Method SW3510B

Analyte	Sample	MS Spike	MS Result	MS %	MSD Spike	MSD Result	MSD %	RPD	RPD	Low Limit	High Limit
	Result	Added	Result	Recovery	Added	Result	Recovery		Limit	LIMIL	Limit
1,4-Dichlorobenzene	ND	130	84.8	65	130	90.6	69.7	7	40	20	124
2,4,5-Trichlorophenol	ND	800	764	95	800	720	90.0	6	40	43	117
2,4,6-Trichlorophenol	ND	800	661	83	800	657	82.1	1	40	14	176
2,4-Dinitrotoluene	ND	130	85.2	66	130	82.9	63.7	3	40	39	139
Hexachlorobenzene	ND	130	71.2	55	130	73.2	56.3	3	40	5	152
Hexachlorobutadiene	ND	130	71.8	55	130	81.1	62.4	12	40	24	116
Hexachloroethane	ND	130	84	65	130	92.8	71.4	10	40	32	113
m,p-Cresols	ND	1600	1180	71	1600	1230	74.7	5	40	27	112
Nitrobenzene	ND	130	90	69	130	90.5	69.6	0	40	35	180
o-Cresol	56.9	800	605	69	800	650	74.1	7	40	31	110
Pentachlorophenol	ND	800	772	96	800	755	94.4	2	40	14	176
Pyridine	ND	1300	83.6	6	1300	72.1	5.54	15	40	0	141

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank J - Estimated value between MDL and PQL

MI - Matrix Interference

D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: TCLP Volatile Organics WorkOrder: 03050225

Method: SW8260B Lab Batch ID: R48244

Method Blank Samples in Analytical Batch:

 RunlD:
 X_030520A-708493
 Units:
 ug/L
 Lab Sample ID
 Client Sample ID

 Analysis Date:
 05/20/2003 13:48
 Analyst:
 BM
 03050225-15D
 16-E-1003-T1-A

Analyte	Result	Rep Limit
1,1-Dichloroethene	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
Benzene	ND	5.0
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroform	ND	5.0
Tetrachloroethene	ND	5.0
Trichloroethene	ND	5.0
Vinyl chloride	ND	10
Surr: 1,2-Dichloroethane-d4	98.3	71-131
Surr: 4-Bromofluorobenzene	99.5	86.3-112
Surr: Toluene-d8	99.3	89.5-108

Laboratory Control Sample (LCS)

RunlD: $X_030520A-708492$ Units: μ g/L Analysis Date: 05/20/2003 13:01 Analyst: BM

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	200	166	83	5	234
1,2-Dichloroethane	200	190	95	49	155
2-Butanone	200	197	99	20	145
Benzene	200	174	87	37	151
Carbon tetrachloride	200	182	91	70	140
Chlorobenzene	200	185	92	37	160
Chloroform	200	185	92	51	138
Tetrachloroethene	200	177	88	64	148
Trichloroethene	200	178	89	75	140
Vinyl chloride	200	120	60	5	251

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 03050225-15

RunlD: X_030520A-709177 Units: μg/L Analysis Date: 05/20/2003 15:20 Analyst: BM

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference

B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL

* - Recovery Unreportable due to Dilution

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: TCLP Volatile Organics WorkOrder: 03050225

Method: SW8260B Lab Batch ID: R48244

Analyte	Sample	MS	MS	MS %	MSD	MSD	MSD %	RPD	RPD	Low	High
	Result	Spike	Result	Recovery	Spike	Result	Recovery		Limit	Limit	Limit
		Added			Added						
1,1-Dichloroethene	ND	200	179	89	200	183	91.6	3	30	5	234
1,2-Dichloroethane	ND	200	195	98	200	194	96.9	1	30	49	155
2-Butanone	ND	200	184	92	200	208	104	12	50	20	145
Benzene	ND	200	230	115	200	229	114	0	30	37	151
Carbon tetrachloride	ND	200	195	98	200	195	97.5	0	30	70	140
Chlorobenzene	ND	200	190	95	200	192	95.9	1	30	37	160
Chloroform	ND	200	190	95	200	190	94.9	0	30	51	138
Tetrachloroethene	ND	200	190	95	200	191	95.3	0	30	64	148
Trichloroethene	ND	200	185	93	200	189	94.6	2	30	75	140
Vinyl chloride	ND	200	131	65	200	138	68.9	5	30	5	251

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

MI - Matrix Interference

D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: pH- on Soil WorkOrder: 03050225 Method: SW9045C Lab Batch ID: R47563

Samples in Analytical Batch:

Lab Sample ID Client Sample ID 03050225-01A 43-E-1001-P1-A 03050225-15D 16-E-1003-T1-A

Sample Duplicate

Original Sample: 03050225-01

WET_030512G-698620 RunID: Units: Std Units Analysis Date: 05/12/2003 14:00 Analyst:

Analyte	Sample	DUP	RPD	RPD
	Result	Result		Limit
pН	7.34	7.36	0	0.7

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

MI - Matrix Interference D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

 Analysis:
 Reactive Sulfide
 WorkOrder:
 03050225

 Method:
 SW7.3.4.2
 Lab Batch ID:
 R47766

Method Blank

Samples in Analytical Batch:

RunID: WET_030514A-701693

Units: mg/Kg

Lab Sample ID

Client Sample ID

Analysis Date:

05/14/2003 9:00

Analyst: GJH

03050225-15D

16-E-1003-T1-A

Analyte	Result	Rep Limit
Reactive Sulfide	ND	8.5

Sample Duplicate

Original Sample: 03050225-15

RunID: WET_030514A-701694 Units: mg/Kg
Analysis Date: 05/14/2003 9:00 Analyst: GJH

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Reactive Sulfide	ND	ND	0	20

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

ank D

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

MI - Matrix Interference

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

 Analysis:
 Reactive Cyanide
 WorkOrder:
 03050225

 Method:
 SW7.3.3.2
 Lab Batch ID:
 R47767

Method Blank

Samples in Analytical Batch:

DR3000_030514A-701702 Units:

Lab Sample ID

Client Sample ID

Analysis Date: 05/14/2003 9:00

RunID:

Analyst: GJH

mg/Kg

03050225-15D

16-E-1003-T1-A

Analyte	Result	Rep Limit
Reactive Cyanide	ND	1.0

Sample Duplicate

Original Sample: 03050225-15

RunID: DR3000_030514A-701703 Units: mg/Kg
Analysis Date: 05/14/2003 9:00 Analyst: GJH

Analyte	Sample	DUP	RPD	RPD
	Result	Result		Limit
Reactive Cyanide	ND	ND	0	20

Qualifiers: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

MI - Matrix Interference
D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: Ignitability-Liquid WorkOrder: 03050225
Method: SW1010 Lab Batch ID: R47811

Method Blank

Samples in Analytical Batch:

RunID: WET_030514F-702287 Units: °F

<u>Lab Sample ID</u> <u>Client Sample ID</u>

Analysis Date: 05/14/2003 13:00 Analyst: GJH 03050225-15D 16-E-1003-T1-A

Analyte	Result	Rep Limit
Ignitability	>150	0

Laboratory Control Sample (LCS)

RunID: WET_030514F-702288 Units: °F
Analysis Date: 05/14/2003 13:00 Analyst: GJH

	Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Ignitability		81	80	99	98.765	101.234

Sample Duplicate

Original Sample: 03050225-15

RunID: WET_030514F-702290 Units: °F
Analysis Date: 05/14/2003 13:00 Analyst: GJH

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Ignitability	>150	>150	0	20

Qualifiers: ND/U - Not Detected at the Reporting Limit

ank D

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

MI - Matrix Interference

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Client Sample ID

ECOLOGY & ENVIRONMENT, INC

001702.CU.03

Analysis: Oil and Grease, Soxhlet/Gravimetric WorkOrder: 03050225 Method: 3540C Lab Batch ID: R47814

Method Blank

WET_030513R-702340 Units:

Analysis Date: 05/13/2003 14:00 Analyst: GJH

RunID:

Analyte Result Rep Limit ND 0.010 Oil & Grease

Samples in Analytical Batch:

Lab Sample ID

03050225-09A 16-E-1004-M1-A 03050225-10A 16-E-1004-M1-B 03050225-11A 16-E-1004-M2-A 03050225-12A DUPF-7

03050225-13A 16-E-1004-0A1-A 16-E-1003-C1-B 03050225-14A 03050225-15A 16-E-1003-T1-A 03050225-16A 16-E-1005-C1-A 03050225-17A 16-E-1004-0A1-B

03050225-18A 16-E-1003-C1-A

Laboratory Control Sample (LCS)

WET_030513R-702341 RunID: Units: Analysis Date: 05/13/2003 14:00 Analyst: GJH

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Oil & Grease	0.1	0.093	93	80	120

Sample Duplicate

Original Sample: 03050225-09

WET_030513R-702342 RunID: Units: 05/13/2003 14:00 Analysis Date: Analyst: GJH

Analyte	Sample	DUP	RPD	RPD
	Result	Result		Limit
Oil & Grease	0.204	0.193	6	20

Qualifiers: ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference D - Recovery Unreportable due to Dilution

B - Analyte detected in the associated Method Blank J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901

Case Narrative for: SPL, Inc.

Certificate of Analysis Number: 03050243

Report To:	Project Name:	1Q03 OPA 17/001702.CU.03
SPL, Inc.	Site:	N. Louisiana
Kitty Davis 500 Ambassador Caffery Parkway	Site Address:	
Scott	PO Number:	03050225
LA	State:	Louisiana
70583-8544	State Cert. No.:	2029
ph: (337) 237-4775 fax:	Date Reported:	5/20/03

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Dean a. Joiner

5/20/03



8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901

SPL, Inc.

Certificate of Analysis Number:

03050243

Report To:

Fax To:

SPL, Inc.

Kitty Davis

500 Ambassador Caffery Parkway

Scott

LA

70583-8544

ph: (337) 237-4775

fax: (337) 237-8005

Project Name:

1Q03 OPA 17/001702.CU.03

Site:

N. Louislana

Site Address:

PO Number:

03050225

State:

Louisiana

State Cert. No.:

2029

Date Reported:

5/20/03

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
16-E-1003-T1-A	03050243-01	Soil	5/3/03 9:00:00 AM	5/7/03 10:00:00 AM	03050225	

L) ean a. Join

5/20/03

Date

Dean Joiner

Senior Project Manager

Joel Grice Laboratory Director

Ted Yen Quality Assurance Officer

5/20/03 3;28;33 PM



8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901

Client Sample ID 16-E-1003-T1-A

Collected: 05/03/2003 9:00

SPL Sample ID:

03050243-01

Site:

N. Louisiana

Analyses/Method	Result	Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq.#
TOTAL ORGANIC HALIDES			MCL	SW9023	Units: mg	g/Kg	
Total Organic Halides (TOX)	6.3	5		1	05/09/03 8:45	TW	1654504

Prep Method	Prep Date	Prep Initials
SW9023	05/09/2003 9:30	ΙΤW

Qualiflers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference

Quality Control Documentation



8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901

SPL, Inc. 1Q03 OPA 17/001702.CU.03

Analysis: Method:

RunID:

Analysis Date:

Total Organic Halides

SW9023

WorkOrder:

03050243

Lab Batch ID:

28095

Method Blank

WET_030509I-1654498

05/09/2003 8:45

Units: Analyst: mg/Kg

TW

Lab Sample ID

Samples in Analytical Batch:

Client Sample ID

03050243-01A

16-E-1003-T1-A

Analyte		Result	Rep Limit
Total Organic Halides (TOX)	_ !	ND	5.0

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked:

03050296-01

RunID:

WET_030509I-1654501

Units:

mg/Kg

Analysis Date:

05/09/2003 8:45

Analyst: TW

Preparation Date: 05/09/2003 9:30 Prep By: TW

Method SW9023

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit		High Limit
Total Organic Halides (TOX)	11.9	100	119	107	100	96.5	84.6	20.8 *	20	65	

Qualifiers:

ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

5/20/03 3:28:38 PM

Sample Receipt Checklist And Chain of Custody



8880 INTERCHANGE DRIVE HOUSTON, TX 77054 (713) 660-0901

Sample Receipt Checklist

Workorder: 03050243			Receive	d By:	NB	
Date and Time Received: 5/7/03 10:00:00) AM		Carrier	name:	FedEx	
Temperature: 4			Chilled i	by:	Water Ice	
1. Shipping container/cooler in good co	ndition?	Yes 🔽	No 🗌	Not Prese	ent	
2. Custody seals intact on shippping co	nta ner/cooler?	Yes	No 🗌	Not Prese	ent 🗸	
3. Custody seals intact on sample bottle	:5?	Yes 🗌	No 🗌	Not Prese	ent 🔽	
4. Chain of custody present?		Yes 🗹	No 🗌			
5. Chain of custody signed when relinqu	sished and received?	Yes 🗹	No 🗔			
6. Chain of custody agrees with sample	labels?	Yes 🗹	No 🗀			
7. Samples in proper container/bottle?		Yes 🗹	No 🗌			
8. Sample containers intact?		Yes 🗹	No 🗌			
9. Sufficient sample volume for indicate	d test?	Yes 🗸	No 🗌			
10. All samples received within holding ti	me?	Yes 🗹	No 🗌			
11. Container/Temp Blank temperature in	compliance?	Yes 🗹	No 🗀		_	
12. Water - VOA vials have zero headspace	e?	Yes	No 🗌	Not Applic	cable 🗹	
13. Water - pH acceptable upon receipt?		Yes 🗌	No □	Not Applic	cable 🗹	
SPL Representative:		Contact Date &	ГІте:			
Client Name Contacted:						
Non Conformance Issues:						
Client Instructions:						
					3	

03050243

SPL, Inc.

Ģ

500 Ambassador Caffery Parkway Scott, LA 70583-8544 (337) 237-4775 **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

Subcontractor:

SPL - Houston

TEL: (713) 660-0901

FAX: (713) 660-8975

Houston, Texas 77054

8880 Interchange Dr

Acct #: INTERCOMPANY ·

06-May-03

•			-									
									Requested Tes			75.7
	Sample ID	Client Sample	Matrix	Collection Date	Due Date	ASTM D240-76						
									•		'	, , , <u></u>
\dashv	03050225-15B	16-E-1003-T1-A	Soil	05/03/03 9:00	05/14/03	1		1.811.1		1		
	03050225-15B	16-E-1003-T1-A	Soil	05/03/03 9:00	05/14/03		1					

Comments:

BTU & TOH - CALL JOHN TRAHAN WITH QUESTIONS

Relinquished by:

Received by:

SPL, Inc.

(713) 660-0901

CHAIN-OF-CUSTODY RECORD 8880 Interchange Drive Houston, TX 77054-

Page 1 of 1

Subcontractor:

SPL-Hydrocarbon Lab

TEL:

FAX:

Acct #: INTERCOMPANY

07-May-03

					Requested Tests
Sample ID	Client Sample	Matrix	Collection Date	Due Date	STM D240-76
03050243-01A	16-E-1003-T1-A	Soil	05/03/03 9:00	05/13/03	

Comments:

BTU analysis.Dean Joiner. \$

	Date/Time	Date/Time
Relinquished by:	5/2 15:45 Received by:	Jerry Meninder 5/2 1545
Relinquished by:	Received by:	

03050243

SPL, Inc.

500 Ambassador Caffery Parkway

Scott, LA 70583-8544 (337) 237-4775

CHAIN-OF-CUSTODY RECORD SPL INTER-COMPANY PRICING

Page 1 of 1

Subcontractor:

SPL - Houston

8880 Interchange Dr

TEL:

(713) 660-0901

FAX:

(713) 660-8975

Houston, Texas 77054

Acct #:

INTERCOMPANY

06-May-03

					Requested Tests
	Sample ID	Test Code	Price	NSTM D240-76 SW902	20B
_	03050225-15B	BTU	\$85.00	1	
į	03050225-15B	TOH_S_9020B	\$75.00	1	

Comments:

BTU & TOH - CALL JOHN TRAHAN WITH QUESTIONS

	Date/Time		Date/Time
Relinquished by:	Received by:	CAL	
Relinquished by:	Received by:	Mysersa	577/03/000



8880 INTERCHANGE DRIVE HOUSTON, TEXAS 77054 PHONE (713) 660-0901

Certificate of Analysis

Number:

1030-2003050073-001A

Randy Ernst Houston Pipeline 1915 Hwy 96 South Lumberton TX 77657

May 08, 2003

Sample ID:

Project Name:

03050243-0†A

Sampled By:

Oil

Project Number:

Sample Of: Sample Date:

05/07/2003

Project Location: Sample Point:

Sample Condition:

N/A psig @ N/A °F

PO / Ref. No:

ANALYTICAL DATA

Test	Method	Resuit	Unit	Detection Limit	Lab Tech.	Date Analyzed
Heat of Combustion	ASTM-D-240	5666	Gross BTU / lb		CS	05/08/03
Heat of Combustion	AS†™-D-240	NR	Net BTU/lb		cs	05/08/03
Heat of Combustion	ASTM-D-240	NR	Gross BTU/Gal		CS	05/08/03
Heat of Combustion	ASTM-D-240	NR	Net BTU/Gal		CS	05/08/03

Comments:

ASTM D240 MODIFIED

Hydrocarbon Laboratory Manager





SPL WORKORDER NO: 2003050135

Mail To: SPL, INC.

ATTN: KITTY DAVIS

500 AMBA\$SADOR CAFFERY PKWY

SCOTT LA 70583

Approved By:

Marshall Charpentier, QAQC Coordinator

Note:

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LAFAYETTE AREA LAB 500 AMBASSADOR CAFFERY PKWY. SCOTT, LOUISIANA ZIP 70583-8544 PHONE: (337) 237-4775

May 12, 2003

Certificate of Analysis

Number: 2030-2003050135-001A

Justin Farrell

Ecology Environmental 11550 Newcastle Ave

Suite 250

Baton Rouge LA 70816

Sample ID:

16-E-1003-T1-A

Project Name: Project Number: 1Qo3 OPA 17

001702.CU.d3

Project Location: Sample Point;

North Louisiana

Sampled By:

Client

Sample Of:

Oil

Sample Date:

05/03/2003

09:00

Sample Condition:

PO / Ref. No:

ANALYTICAL DATA

Test	Method	Result	Unit	Detection Limit	Lab Tech.	Date Analyzed
Total Sediment and Water	ASTM-D-4007	50.0	vol%		BG	05/12/03

Comments:

Marshall Chargentie QA/QC CoOrdinator

2003050135-001

SPL, Inc.

500 Ambassador Caffery Parkway Scott, LA 70583-8544 (337) 237-4775

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

SPL- HYDROCARBON

TEL: FAX:

SCOTT, LOUISIANA

Acct #:

06-May-03

_			, <u>-</u>			sted Tests	,]
Sample ID	Client Sample	Matrix	Collection Date	Due Date	D4007			<u></u>	
03050225-15C	16-E-1003-T1-A	Soil	AE 103 (03 0:00	05/44/00	₁	 			,
03030220-100	10-E-1003-11-/\	3011	05/03/03 9:00	05/14/03	1				П

Comments:

BS&W

\$3500

	0 1	Date/Time	Dat	e/Time
	Relinquished by: B. Jaufa	5/6/03/1645	Received by:	
ĺ	Relinquished by:		Received by: 1 (aut 5/7	1030800

Sample Receipt Checklist And Chain of Custody



500 AMBASSADOR CAFFERY PARKWAY SCOTT, LA 70583 (337) 237-4775

Sample Receipt Checklist

Workorder:	03050225			Receive	ed By:	CGM	
Date and Time Received:	5/5/2003 2:20:00 PM			Carrier r		SPL-Delivery	
Temperature:	8.4			Chilled b	oy:	Water Ice	
1. Shipping container/o	cooler in good condition?	Ye	\checkmark	No 🗆	Not Prese	ent 🗆	
2. Custody seals intac	t on shippping container/cooler?	Ye	\checkmark	No 🗆	Not Prese	ent 🗆	
3. Custody seals intac	t on sample bottles?	Ye		No 🗆	Not Prese	ent 🗹	
4. Chain of custody pr	esent?	Ye	~	No 🗆			
5. Chain of custody sign	gned when relinquished and receiv	Ye	~	No 🗆			
6. Chain of custody ag	rees with sample labels?	Ye	V	No 🗆			
7. Samples in proper of	container/bottle?	Ye		No 🗆			
8. Sample containers i	ntact?	Ye		No 🗆			
9. Sufficient sample vo	olume for indicated test?	Ye		No 🗆			
10. All samples receive	d within holding time?	Ye		No 🗆			
11. Container/Temp Bla	nk temperature in compliance?	Ye		No 🗹			
12. Water - VOA vials ha	ave zero headspace	Ye		No 🗆	Not Appli	icable 🗹	
13. Water - pH acceptab	le upon receipt?	Ye		No 🗆	Not Appli	icable 🗹	
SPL Representativ	ve:	Conta	ct Date & 1	Γime:			
Client Name Contacte	ed:						
Non Conformance Issues:							
Client Instructions:							

	7		S	PL, I	nc.					SPL Wo	rkorder l	No:			13	558	9
	Ar	nalysis Re	quest &	c Chai	n of C	ustod	y Reco	ord					,		page_	2 of	2
Client Name: Ecdory & L	Environ	ment,	Inc.	matrix		size	pres.				Re	quest	ted A	nalys	is .		
<u> </u>	jewcas	1			glass	4=40z 40=vial 16=160z			~ 1	15 E	1.8						
Client Contact: TUSHN T	arrel			=soil =other:	A=amber V=vial	40 =	2=HNO3 O=other:	iners) 2	8,784 BS	V0C	·	İ				l
Project Name: 1/203	OPA			=soil	= arr = vis	loz 160	HH.	ntai	19	2,2	8,20	ļ					
Project Number: 00170	<u>a .cu</u>	<u> </u>		NO		4=4 16=		Number of Containers	01/+ Grea	halogens 1 Btu	RCI, TCCAVOC, SVOC, Ro						
Project Location: N. LOW	<u>J'Sian</u>	م_		=water =sludge	P=plastic G=glass	l liter 802	= HCl = H2SO4	er o	1.	Total Ac Metals	7C (eb)						
Invoice To:			<u></u>		=pla=	= 1 1	H	um	$ \tilde{Q} $	75.	, t						i
SAMPLE ID	DATE	TIME	comp grab	1		- 8	3=	Z			ØT3						
16-E-1004-M2-A	5.3.03	1315	X	S	G	4		1_	X					-			
DuPE-7	5.3.03		X	S	G	3			X	<u> </u>							
16-E-1004-0A1-A	5·3·63	1215	X	S	5	4	_	__	X								
	5.3.03	0820	X	S	6	4		١	K						<u> </u>		
	5.3.03	0900	X	0	6	8		1									
	5.3.03		X	0	6	4		3	メ	\geq	<u> </u>						
16-E-1005-C1-A	6.303	1355	X	S	6	4		1	X		, 		****				
16-E1001-0A1-B	5.303	1215	X	S	6	4			X	<u> </u>					·		
16.E-1003-CI-A	5.3.03	0820	X	S	6	4		1	X	<u> </u>			ļ	ļ			·
-	5.3.03	0900	X	<u> S</u>	G	Gallon		1	×	<u> </u>	区	i i	<u> </u>			<u> </u>	l <u></u>
Client/Consultant Remarks:				Laborate	огу гепцав	is:					Ì			Intact		ÍΥ	N
	le in			<u> </u>	 _			Cassial	Detecti	an limit	s (specify	η-		Temp		icw (înit	iaD:
Requested TAT	Special Report			Results		Raw Da	_	1		on Laudi	- (- J -c-11)					(*****	
24hr 🗀 72hr 📄		ndard QC	Leve	a 3 QC	<u>u</u>	date	<u>∞ []</u>	time		V2. Reco	med by:				<u> </u>		
24hr 72hr	•					5/8	-/03		20		Red	WW	<u> </u>	<u> 13, </u>	Coc	<u> </u>	
48hr 🗋 Standard 📋	3. Relinquisho	d by:	<u> </u>			date	/	time		1 Rea	ived by:	/					
Other 🔲	5. Relinquishe	d by:		=		date		time		6. Reco	ived by	Laborato	жу:	······			
8880 Interchange Drive.	Houston 7	TX 77054 (7	13) 660-0	901		ā	500 A	mbass	ador (Caffery	Park	way. S	cott, L	A 7058	33 (318	3) 237-	47 75

459-Hughes Drive, Traverse City, MI 49684 (616) 947-5777



500 AMBASSADOR CAFFERY PARKWAY

SCOTT, LA 70583

(337) 237-4775

Case Narrative for:

ECOLOGY & ENVIRONMENT, INC

Certificate of Analysis Number:

03050225

Report To:

Project Name:

001702.CU.03

ECOLOGY & ENVIRONMENT, INC

Site:

1Q03

Justin Farrell 11550 Newcastle Ave.

Baton Rouge

Site Address:

Suite 250

PO Number:

Louisiana

LA 70816State:

State Cert. No.:

ph: (225) 298-5080

fax:

Date Reported:

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: _____ PAGES

John D Trahan
Project Manager

7/3/03

Date



500 AMBASSADOR CAFFERY PARKWAY

SCOTT, LA 70583 (337) 237-4775

ECOLOGY & ENVIRONMENT, INC

Certificate of Analysis Number:

03050225

Report To:

ECOLOGY & ENVIRONMENT, INC

Justin Farrell

11550 Newcastle Ave.

Suite 250 **Baton Rouge**

LA

70816-

ph: (225) 298-5080

fax: (225) 298-5081

Project Name:

1Q03

001702.CU.03

Site Address:

PO Number:

State:

Site:

Louisiana

State Cert. No.:

Fax To:

Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
43-E-1001-P1-A	03050225-01	Soil	5/2/03 12:15:00 PM	5/5/03 2:20:00 PM	135591,135589	
43-E-1001-P1-B	03050225-02	Soil	5/2/03 12:15:00 PM	5/5/03 2:20:00 PM	135591,135589	
41-E-1001-C1-A	03050225-03	Soil	5/2/03 3:30:00 PM	5/5/03 2:20:00 PM	135591,135589	
43-E-1002-C1-B	03050225-04	Soil	5/2/03 1:45:00 PM	5/5/03 2:20:00 PM	135591,135589	
43-E-1002-C1-A	03050225-05	Soil	5/2/03 1:45:00 PM	5/5/03 2:20:00 PM	135591,135589	
43-E-1001-C1-A	03050225-06	Soil	5/2/03 12:45:00 PM	5/5/03 2:20:00 PM	135591,135589	
43-E-1001-C1-B	03050225-07	Soil	5/2/03 12:45:00 PM	5/5/03 2:20:00 PM	135591,135589	
16-E-1004-C1-A	03050225-08	Soil	5/3/03 11:15:00 AM	5/5/03 2:20:00 PM	135591,135589	
16-E-1004-M1-A	03050225-09	Soil	5/3/03 12:35:00 PM	5/5/03 2:20:00 PM	135591,135589	
16-E-1004-M1-B	03050225-10	Soil	5/3/03 12:35:00 PM	5/5/03 2:20:00 PM	135591,135589	
16-E-1004-M2-A	03050225-11	Soil	5/3/03 1:15:00 PM	5/5/03 2:20:00 PM	135591,135589	
DUPE-7	03050225-12	Soil	5/3/03	5/5/03 2:20:00 PM	135591,135589	
16-E-1004-0A1-A	03050225-13	Soil	5/3/03 12:15:00 PM	5/5/03 2:20:00 PM	135591,135589	
16-E-1003-C1-B	03050225-14	Soil	5/3/03 8:20:00 AM	5/5/03 2:20:00 PM	135591,135589	
16-E-1003-T1-A	03050225-15	Soil	5/3/03 9:00:00 AM	5/5/03 2:20:00 PM	135591,135589	
16-E-1005-C1-A	03050225-16	Soil	5/3/03 1:55:00 PM	5/5/03 2:20:00 PM	135591,135589	
16-E-1004-0A1-B	03050225-17	Soil	5/3/03 12:15:00 PM	5/5/03 2:20:00 PM	135591,135589	
16-E-1003-C1-A	03050225-18	Soil	5/3/03 8:20:00 AM	5/5/03 2:20:00 PM	135591,135589	П

la Benjam for Project Manager

7/3/03

Date

Ron Benjamin Laboratory Director

Tristan Davis Quality Assurance Officer

/FDI	7		S	PL, I	nc.					SPL We	rkarder	No:			13	3559	1
	A	nalysis R		- 8		Custod	y Rec	ord		03	30:	5n	22	5	page _		2
Client Name: Ecdogy +	Environ	ment.	nc	matrix	bottle	size	pres.						ted A				
	Vewcas				glas	vial			ſ		241						
Client Contact: Justin] = H	9.00	04	နို့ လို	ners		Q.						8	
Project Name: 1003	OPA			S=soil O=other:	A=amber V=vial	4=4oz 40= 6=16oz	2=HNO3 O=other:	ntai		3							
Project Number: 00 170		03			₹ >	4=4	1	ပ္ပိ	200	Grease							
Project Location: N. Lowis	iana			=water =sludge	stic ss		#HCI #H2SO4	Number of Containers	278	7							
Invoice To:					plastic glass	1 liter 8oz	H2 H2	Ą.	2	0'.7							2
SAMPLE ID	DATE	TIME	comp grab	≥ IS	4.6	- 8	3 - 8	ž	0	0							
17070700	5.2.03	1215	C.	S	ρ		_	١	X								
43-E-1001-PI-B	5.2.03	1215	X	5	G	4		1		X							
41-E-100)-CI-A	5.2.03	1530	X	S	G	4	_	\		X							
43-E-1002-CI-B	5.2.03	1345	X	2	G	4	_		* 3	X							
43-E-1002-CI-A		1345	X	5	6	ч	_			X							
43-E-1001-CI-A	5.2.03		X	S	G	4				X							-
	5.2.03	Charles of	X	3	G	4				X							
	5.3.03		X	5	G	4				X						3.74	
16-E-1004- MI-A	53.03		X	S	6	4	_			X							
	5.3.03	Sharana wa malay	X	S	6	4				X							
Client/Consultant Remarks:				Laborato	ry remark	KS:								Intact	2 17	Y	N.
			‡	RW	1-10	12,	RL-6	6 3	. ਖ਼ਿ	2W,	12		- 1		NCA		14
Requested TAT	Special Report	ing Requireme	nts Fax	Results		Raw Dat	· 🔾	Special	Detection	n Limits				1	PM revi	cw (initi	al):
150	Sta	ndard QC	Leve	3 QC		Level 4 (x []										
24hr 72hr	1. Relinquishe	d by Sampler:				date	100	time	100	2. Recey	d by:			2	0		
48hr 🗋 Standard 🔲	3. Relinquishe	d by:				date	103	time	120	4. Recei	ved by:	un	<u> </u>	7. (Coc	0	
Other 🔲	5. Relinquishe	d by:				date		time		6. Recei	ved by 1.	aborator	ry:	 			
8880 Interchange Drive, 459-Hughes Drive, Trav		The second of the				۵	500 Aı	mbassa	ador C	affery	Parkw	ray, So	ott, LA	7058	3 (318)	237-4	775

1500	7	57.	S	PL, I	nc.					SPL We	rkonter l	No:		-	558	
	Ar	alysis Re	equest &	c Chai	n of C	ustod	y Reco	rd							2 of	2
Client Name: Ecdory 1				matrix	bottle	size	pres.		0-11		Re	quested	I Analy	sis		
	jeuxas		1 - 100 - 1		glass	=vial				itel Si	Rut					
Client Contact: TUSHN T	47			Ë	<u>ـ ق</u> ـ	0	S =	ners	S.	多	,20C	1	1			
Project Name: 1/203	OPA		1200200-0	S=soil O=other:	A=amber V=vial	NVO	2=HNO3 O=other:	ntai	è	500	6,5					
Project Number: 00170	a.cu	.03			< >	4=40		Number of Containers	1+ Grea	Foted Hulogens metals 18ty	RCI, TCCPVOC, SVOC, Ri	i	1			
Project Location: N. Lon	isian	۹		=water =sludge	P=plastic G=glass	STATE TO SERVICE	1=HCl 3=H2SO4	er o	7	27	500	1				
Invoice To:			,		pla	=1 liter ==80z	HH	quin	Oct	242	- F			1		
SAMPLE ID	DATE	TIME	comp grab	1		- ×	3.	Ź		-2	OK 3			┿-		
16-E-1004-M2-A	5.3.03	1315	X	S	G	4		1_	X					-		-
DuPE-7	5.3.03		X	3	G	4	-	1	X							
16-E-1004-0A1-A	5.3.03	1215	X	5	6	4	-	1	X						_	
16-E-1003-CI-B	5.3.03	6820	X	S	6	14	_	1	X							
	5.3.03	0900	X	0	16	8	-	1								
16-E-1003-TI-A	5.3.03		X	0	6	4	-	3	X	\times						
16-E-1005-CI-A	5.3.03	1355	X	S	6	4	_	1	X							
16-E1004-OAI-B	5.303		X	S	6	4	-	1	X							
16.E-1003-CI-A	5.3.03	0820	X	S	6	4	_	1	X							
16-E-1003-TI-A	5.3.03		X	S	G	Gallon	<u></u>	<u> </u>	来		X				<u> </u>	
Client/Consultant Remarks:	Water State of State			Laborat	ory remar						•		Inta	a? 💆	ĬΥ □	N
													Ten			
Requested TAT	Special Report	ting Requireme	ents Fax	Results		Raw Da		Specia	Detecti	on Limi	s (specif	y):		rm re	vicw (ini	nal):
		ndard QC	•	13 QC			∞ <u>[]</u>	<u> </u>		12						
24hr 72hr	1. Relinquishe	d by Sampler:				date 5/	=/03	time	:20	7	ered by:	rune	13,	Ca	3	
38hr Standard	3. Relinquisho	d by:				date	-	time		4. Rec	cived by:					
POther []	5. Relinquishe	d by:		-		date		time		6. Rec	cived by	Laboratory:				-
		m/ mmo=1 . ^	****	1004			E00 A			2-66-	. D. J	Cart	+ T A 70	592 /21	g) 227	ATTE
8880 Interchange Drive,						u	500 A	mbass	sador (atter	y Pank	way, Scot	T, LA /0	303 (31	.0) 43/-	4//3
459-Hughes Drive, Trav	erse City, M	Ali 49684 (6	16) 947-5	777												

CLIENT SAMPLE ID

Lab Name:	SPL, Inc.		े 1	6-E-1003-T1-A
Lab Code:	SPLLAF		SDG No.:	03050225
Matrix:	SOIL		Lab Sample ID:	03050225-15D
Sample wt/vol:	5.00 (g/mL)	G	Lab File ID:	X140S03.D
Level:	LOW	-	Date Collected:	5/3/03
	LOW		Date Extracted:	
% Moisture:				
GC Column:	HP5-30meter ID	<u>.25</u> (mm)	Date Analyzed:	5/20/03
Extract Volume:	(ul)		Dilution Factor:	10.0
			CONCENTRATION UNITS:	μg/L

CAS NO.	COMPOUND (mg/L	or ug/Kg) µg/L	C
75-35-4	1,1-Dichloroethene	65000	U
107-06-2	1,2-Dichloroethane	65000	U
78-93-3	2-Butanone	130000	U
71-43-2	Benzene	65000	U
56-23-5	Carbon tetrachloride	65000	U
108-90-7	Chlorobenzene	65000	U
67-66-3	Chloroform	65000	U
127-18-4	Tetrachloroethene	65000	U
79-01-6	Trichloroethene	65000	U
75-01-4	Vinyl chloride	130000	u

CLIENT SAMPLE ID

								16-E-1003-T	1-AMS	
Lab Name:	SPL, Inc.									
Lab Code:	SPLLAF					SD	G No.:		Ō	3050225
Matrix:	SOIL					Lab	Sample ID:		0305022	5-15DMS
Sample wt/vol:	5.00	(g/mL)		G		Lab	File ID:		X	140K01.D
Level:	LOW					Dat	te Collected:			5/3/03
% Moisture:						Dat	e Extracted:			
GC Column:	HP5-30mete	ŗ	ID:	.25	(mm)	Dat	te Analyzed:			5/20/03
Extract Volume:		(ul)				Dilu	ution Factor:			10.0
						CONCEN	ITRATION UNITS:		µg/L	
CAS	NO.		сом	POUN)	(mg/L or ug/Kg)		μg/L	Q	

CAS NO.	COMPOUND	(mg/L or ug/Kg)	μg/L	Q
75-35-4	1,1-Dichloroethene		180	
107-06-2	1,2-Dichloroethane		200	
78-93-3	2-Butanone	The state of the s	180	
71-43-2	Benzene		230	
56-23-5	Carbon tetrachloride		200	
108-90-7	Chlorobenzene		190	
67-66-3	Chloroform		190	
127-18-4	Tetrachloroethene		190	
79-01-6	Trichloroethene		190	
75-01-4	Vinyl chloride		130	

Chlorobenzene

Tetrachloroethene

Trichloroethene

Vinyl chloride

Chloroform

CLIENT SAMPLE ID

190

190

190

190

140

Lab Name:	SPL, Inc.				16-E-1003-7	1-AMSD	
Lab Code:	SPLLAF			SDG No.:		Ì	03050225
Matrix:	SOIL			Lab Sample ID:		03050225	-15DMSD
Sample wt/vol:	5.00 (g/mL	.) <u>G</u>		Lab File ID:		X	140KD1.D
Level:	LOW			Date Collected:			5/3/03
% Moisture:				Date Extracted:			
GC Column:	HP5-30meter	ID: <u>.25</u>	(mm)	Date Analyzed:			5/20/03
Extract Volume:	(ul)			Dilution Factor:			10.0
				CONCENTRATION UNITS	:	µg/L	
CAS N	10.	COMPOUND)	(mg/L or ug/Kg)	µg/L	Q	
75-35-	4	1,1-Dichloroe	thene		180		Ī
107-06	5-2	1,2-Dichloroe	thane		190		
78-93-	3	2-Butanone			210		
71-43-	2	Benzene			230		
56-23-	5	Carbon tetrac	chloride		200		

108-90-7

67-66-3

127-18-4

79-01-6

75-01-4

Form 1

CLIENT SAMPLE ID

MBLK

Lab Name:

SPL, Inc.

SPLLAF

SDG No.:

03050225

Lab Code: Matrix:

LEACHATE

Lab Sample ID:

MBLK

Sample wt/vol:

5.00

ML

Lab File ID:

X140B01.D

Level:

LOW

Date Collected:

Date Extracted:

% Moisture:

GC Column:

HP5-30meter

ID: .25 (mm) Date Analyzed:

5/20/03

Extract Volume:

(ul)

Dilution Factor:

CONCENTRATION UNITS:

1.0

(g/mL)

µg/L

CAS NO.	COMPOUND	(mg/L or ug/Kg)	μg/L	Q
75-35-4	1,1-Dichloroethene		5	U
107-06-2	1,2-Dichloroethane		5	U
78-93-3	2-Butanone		10	U
71-43-2	Benzene		5	U
56-23-5	Carbon tetrachloride		5	u
108-90-7	Chlorobenzene		5	U
67-66-3	Chloroform		5	U
127-18-4	Tetrachloroethene		5	U
79-01-6	Trichloroethene		5	U
75-01-4	Vinyl chloride		10	U

5/20/03

µg/L

LBLK Lab Name: SPL, Inc. Lab Code: SPLLAF SDG No.: 03050225 Matrix: LEACHATE Lab Sample ID: **LBLK** Sample wt/vol: 5.00 (g/mL) ML Lab File ID: X140B02.D Date Collected: LOW Level: Date Extracted:

% Moisture:

GC Column: HP5-30meter ID: .25 (mm)

Date Analyzed:

CONCENTRATION UNITS:

Dilution Factor: 10.0 Extract Volume: (ul)

CAS NO. COMPOUND (mg/L or ug/Kg) µg/L Q 75-35-4 1,1-Dichloroethene 50 U 107-06-2 1,2-Dichloroethane 50 U 78-93-3 2-Butanone 100 U 71-43-2 Benzene 50 U 56-23-5 Carbon tetrachloride 50 U 108-90-7 Chlorobenzene 50 U 67-66-3 Chloroform 50 U 127-18-4 Tetrachloroethene 50 U 79-01-6 Trichloroethene 50 U 75-01-4 Vinyl chloride 100 U

CLIENT SAMPLE ID

µg/L

					LBLK
Lab Name:	SPL, Inc.				
Lab Code:	SPLLAF			SDG No.:	03050225
Matrix:	LEACHATE			Lab Sample ID:	LBLK
Sample wt/vol:	5.00 (g/mL)	ML		Lab File ID:	X140B03.D
Level;	LOW			Date Collected:	
% Moisture:				Date Extracted:	
GC Column:	HP5-30meter ID:	.25	(mm)	Date Analyzed:	5/20/03
Extract Volume:	(ul)			Dilution Factor:	10.0

CAS NO.	COMPOUND	(mg/L or ug/Kg)	µg/L	Q
75-35-4	1,1-Dichloroethene		50	U
107-06-2	1,2-Dichloroethane		50	U
78-93-3	2-Butanone		100	U
71-43-2	Benzene		50	U
56-23-5	Carbon tetrachloride		50	U
108-90-7	Chlorobenzene		50	U
67-66-3	Chloroform		50	U
127-18-4	Tetrachloroethene		50	U
79-01-6	Trichloroethene		50	U
75-01-4	Vinyl chloride		100	U

CONCENTRATION UNITS:

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140S03.D

Report Date: 18-Jul-2003 10:44

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 20-MAY-2003

Lab File ID: X140S03.D Calibration Time: 12:15

Lab Smp Id: SAMP 03050225-15D X

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: bam
Method File: \LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen	394856	197428	789712	366120	-7.28
47 1,4-Difluorobenze	561648	280824	1123296	521105	-7.22
70 Chlorobenzene-d5	457682	228841	915364	427747	-6.54
95 1,4-Dichlorobenze	239906	119953	479812	218659	-8.86

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze	4.96 5.79 9.35 12.56	4.46 5.29 8.85 12.06	5.46 6.29 9.85 13.06	4.96 5.79 9.35 12.56	-0.00 -0.00 0.06 -0.00

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140S03.D

Report Date: 18-Jul-2003 10:44

SPL

RECOVERY REPORT

Client Name:

Client SDG:

Sample Matrix: LIQUID

Fraction: VOA

Operator: bam

Lab Smp Id: SAMP 03050225-15D X Level: LOW Data Type: MS DATA

SampleType: SAMPLE

SpikeList File: 8260wlcs.spk

Quant Type: ISTD

Sublist File: tclp.sub
Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260_TCLP

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 41 1,2-Dichloroethane	500.000	501.941	100.39	71-131
\$ 61 Toluene-d8	500.000	491.817	98.36	90-108
\$ 82 Bromofluorobenzene	500.000	498.147	99.63	86-112

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140K01.D

Report Date: 18-Jul-2003 10:43

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i

Lab File ID: X140K01.D

Lab Smp Id: MS 03050225-15DMS

Analysis Type: VOA

Level: LOW

Quant Type: ISTD

Sample Type: WATER

Calibration Date: 20-MAY-2003

Calibration Time: 12:15

Operator: bam Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260_TCLP

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze		280824	789712 1123296 915364 479812	0,,100	-4.41 -4.54 -4.19 -5.50

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze		4.46 5.29 8.85 12.06	5.46 6.29 9.85 13.06	4.96 5.79 9.36 12.56	0.02 0.02 0.07 0.01

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140K01.D

Report Date: 18-Jul-2003 10:44

SPL

RECOVERY REPORT

Client Name: Sample Matrix: LIQUID

Client SDG: Fraction: VOA

Lab Smp Id: MS 03050225-15DMS

Operator: bam

Level: LOW Data Type: MS DATA SpikeList File: tclpv.spk

SampleType: MS Quant Type: ISTD

Sublist File: tclp.sub
Method File: \LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m
Misc Info: 8260_TCLP

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Vinyl Chloride	200.000	130.673	65.34	5-251
11 1,1-Dichloroethene	200.000	178.534	89.27	5-234
26 2-Butanone	200.000	184.504	92.25	20-145
33 Chloroform	200.000	190.470	95.23	51-138
43 1,2-Dichloroethane	200.000	195.127	97.56	49-155
44 Benzene	200.000	229.700	114.85	37-151
45 Carbon Tetrachlori	200.000	195.323	97.66	70-140
52 Trichloroethene	200.000	185.415	92.71	75-140
69 Tetrachloroethene	200.000	190.089	95.04	64-148
71 Chlorobenzene	200.000	189.666	94.83	37-160

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 41 1,2-Dichloroethane	500.000	501.944	100.39	71-131
\$ 61 Toluene-d8	500.000	489.948	97.99	90-108
\$ 82 Bromofluorobenzene	500.000	500.990	100.20	86-112

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140KD1.D

Report Date: 18-Jul-2003 10:44

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 20-MAY-2003

Lab File ID: X140KD1.D Calibration Time: 12:15

Lab Smp Id: MSD 03050225-15DMSD

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER Operator: bam
Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	======
38 Pentafluorobenzen		197428	789712	371118	-6.01
47 1,4-Difluorobenze	561648	280824	1123296	529886	-5.66
70 Chlorobenzene-d5	457682	228841	915364	433634	-5.25
95 1,4-Dichlorobenze	239906	119953	479812	223515	-6.83

	569 13100 25100 2010 3010 3010	RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze	4.96 5.79 9.35 12.56	4.46 5.29 8.85 12.06	5.46 6.29 9.85 13.06	4.96 5.79 9.35 12.56	0.00 0.00 0.07 0.00

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140KD1.D

Report Date: 18-Jul-2003 10:44

SPL

RECOVERY REPORT

Client Name: Sample Matrix: LIQUID

Client SDG: Fraction: VOA

Lab Smp Id: MSD 03050225-15DMSD

Operator: bam SampleType: MSD Quant Type: ISTD

Level: LOW

Data Type: MS DATA SpikeList File: tclpv.spk

Sublist File: tclp.sub
Method File: \LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m
Misc Info: 8260_TCLP

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Vinyl Chloride	200.000	137.820	68.91	5-251
11 1,1-Dichloroethene	200.000	183.204	91.60	5-234
26 2-Butanone	200.000	207.973	103.99	20-145
33 Chloroform	200.000	189.838	94.92	51-138
43 1,2-Dichloroethane	200.000	193.774	96.89	49-155
44 Benzene	200.000	228.942	114.47	37-151
45 Carbon Tetrachlori	200.000	195.085	97.54	70-140
52 Trichloroethene	200.000	189.241	94.62	75-140
69 Tetrachloroethene	200.000	190.645	95.32	64-148
71 Chlorobenzene	200.000	191.840	95.92	37-160

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 41 1,2-Dichloroethane	500.000	500.024	100.00	71-131
\$ 61 Toluene-d8	500.000	497.784	99.56	90-108
\$ 82 Bromofluorobenzene	500.000	495.838	99.17	86-112

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140B01.D

Report Date: 18-Jul-2003 12:21

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 20-MAY-2003

Lab File ID: X140B01.D Calibration Time: 12:15
Lab Smp Id: MBLK MBLK

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: bam

Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260 W ALL

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DIFF
38 Pentafluorobenzen 47 1,4-Difluorobenze			789712 1123296		-1.37 -1.70
70 Chlorobenzene-d5 95 1,4-Dichlorobenze	457682 239906	228841	915364 479812		-1.04

STANDARD	LOWER	UPPER	SAMPLE	%DIFF
========	========	========	========	======
4.96 5.79 9.35 12.56	4.46 5.29 8.85	5.46 6.29 9.85	4.96 5.79 9.35	-0.01 -0.01 0.06
	4.96 5.79 9.35	4.96 5.79 9.35 4.46 8.85	4.96 4.46 5.46 5.79 5.29 6.29 9.35 8.85 9.85	4.96 4.46 5.46 4.96 5.79 5.29 6.29 5.79 9.35 8.85 9.85 9.35

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140B01.D

Report Date: 18-Jul-2003 12:22

SPL

RECOVERY REPORT

Client Name: Client SDG: Sample Matrix: LIQUID Fraction: VOA

Operator: bam

Lab Smp Id: MBLK MBLK Level: LOW Data Type: MS DATA SampleType: BLANK SpikeList File: 8260wlcs.spk Quant Type: ISTD

Sublist File: tclp.sub
Method File: \LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260 W ALL

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 41 1,2-Dichloroethane	50.0000	49.1586	98.32	71-131
\$ 61 Toluene-d8	50.0000	49.6516	99.30	90-108
\$ 82 Bromofluorobenzene	50.0000	49.7328	99.47	86-112

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140B02.D

Report Date: 18-Jul-2003 10:43

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 20-MAY-2003

Lab File ID: X140B02.D Calibration Time: 12:15
Lab Smp Id: LBLK LBLK X10

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: bam

Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260 TCLP

5.00		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	=======	========	========	========	======
38 Pentafluorobenzen		197428	789712	384284	-2.68
47 1,4-Difluorobenze	561648	280824	1123296	551440	-1.82
70 Chlorobenzene-d5	457682	228841	915364	452739	-1.08
95 1,4-Dichlorobenze	239906	119953	479812	233396	-2.71

		RT 1	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
================	========	========	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze		4.46 5.29 8.85 12.06	5.46 6.29 9.85 13.06	4.96 5.79 9.36 12.56	0.02 0.02 0.07 0.01

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140B02.D

Report Date: 18-Jul-2003 10:43

SPL

RECOVERY REPORT

Client Name: Client SDG: Sample Matrix: LIQUID Fraction: VOA

Lab Smp Id: LBLK LBLK X10

Operator: bam

Level: LOW Data Type: MS DATA SampleType: BLANK Quant Type: ISTD SpikeList File: 8260wlcs.spk

Sublist File: tclp.sub
Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m
Misc Info: 8260_TCLP

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 41 1,2-Dichloroethane	500.000	506.177	101.24	71-131
\$ 61 Toluene-d8	500.000	491.031	98.21	90-108
\$ 82 Bromofluorobenzene	500.000	495.808	99.16	86-112

Data File: \LAFTGT1\ee\chem\X.i\X030520.b\X140B03.D

Report Date: 18-Jul-2003 10:43

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 20-MAY-2003

Lab File ID: X140B03.D Calibration Time: 12:15 Lab Smp Id: LBLK LBLK X10

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: bam
Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260_TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	=======	========	========	
38 Pentafluorobenzen		197428	789712	377053	-4.51
47 1,4-Difluorobenze	561648	280824	1123296	541462	-3.59
70 Chlorobenzene-d5	457682	228841	915364	441378	-3.56
95 1,4-Dichlorobenze	239906	119953	479812	229281	-4.43

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
================	========	========	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze		4.46 5.29 8.85 12.06	5.46 6.29 9.85 13.06	4.96 5.79 9.36 12.56	0.02 0.02 0.08 0.01

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT.

RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140B03.D

Report Date: 18-Jul-2003 10:43

SPL

RECOVERY REPORT

Client Name: Client SDG: Sample Matrix: LIQUID Fraction: VOA

Lab Smp Id: LBLK LBLK X10

Level: LOW Data Type: MS DATA Operator: bam

SampleType: BLANK SpikeList File: 8260wlcs.spk Quant Type: ISTD

Sublist File: tclp.sub
Method File: \LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m
Misc Info: 8260_TCLP

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 41 1,2-Dichloroethane	500.000	497.583	99.52	71-131
\$ 61 Toluene-d8	500.000	493.829	98.77	90-108
\$ 82 Bromofluorobenzene	500.000	499.753	99.95	86-112

2B

Surrogate Recovery - Sample Data TCLP Volatile Organics

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LEVEL:

LOW

Level:(low/med)

LOW

EPA SAMPLE NO.	SMC1 (BFB) #	SMC2 (DCE) #	SMC3 (TOL) #	TOT
01 16-E-1003-T1-AMS	100	100	98	0
02 16-E-1003-T1-A	100	100	98	0
03 16-E-1003-T1-AMSD	99	100	100	0

QC Limits

 SMC 1 (BFB)
 = 4-Bromofluorobenzene
 86-115
 %

 SMC 2 (DCE)
 = 1,2-Dichloroethane-d4
 80-120
 %

 SMC 3 (TOL)
 = Toluene-d8
 88-110
 %

* Values outside of contract required QC limits

Column to be used to flag recovery values

07/23/03 12:07

FORM II

2A Surrogate Recovery - Lab QC Data TCLP Volatile Organics

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LEVEL:

LOW

EPA SAMPLE NO.	SMC1 (BFB) #	SMC2 (DCE) #	SMC3 (TOL) #	TOT
01 LCS	99	98	99	0
02 MBLK	99	98	99	0
03 LBLK	99	101	98	0
04 LBLK	100	100	99	0

QC Limits

SMC 1	(BFB)	=	4-Bromofluorobenzene	86-115	%
SMC 2	(DCE)	=	1,2-Dichloroethane-d4	80-120	%
SMC 3	(TOL)	=	Toluene-d8	88-110	%

^{*} Values outside of contract required QC limits

Column to be used to flag recovery values

07/23/03 16:30

FORM II

3 SPIKE/SPIKE DUPLICATE RECOVERY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Matrix Spike - Sample No.:

16-E-1003-T1-A

Analysis Date

5/20/03

Level:(low/med)

LOW

COMPOUND	SPIKE ADDED (µg/L)	SAMPLE CONCENTRATION (µg/L)	SPIKE CONCENTRATION (µg/L)	SPIKE % REC#	QC. LIMITS REC.
1,1-Dichloroethene	200	0	180	90	5-234
1,2-Dichloroethane	200	0	200	100	49-155
2-Butanone	200	0	180	90	20-145
Benzene	200	0	230	115	37-151
Carbon tetrachloride	200	0	200	100	70-140
Chlorobenzene	200	0	190	95	37-160
Chloroform	200	0	190	95	51-138
Tetrachloroethene	200	0	190	95	64-148
Trichloroethene	200	0	190	95	75-140
Vinyl chloride	200	0	130	65	5-251

COMPOUND	SPIKE ADDED	SPIKE DUP CONCENTRATION	SPK DUP	%		IMITS
	(µg/L)	(µg/L)	REC#	RPD#	RPD	REC.
1,1-Dichloroethene	200	180	90	0	30	5-234
1,2-Dichloroethane	200	190	95	5	30	49-155
2-Butanone	200	210	105	15	50	20-145
Benzene	200	230	115	0	30	37-151
Carbon tetrachloride	200	200	100	0	30	70-140
Chlorobenzene	200	190	95	0	30	37-160
Chloroform	200	190	95	0	30	51-138
Tetrachloroethene	200	190	95	0	30	64-148
Trichloroethene	200	190	95	0	30	75-140
Vinyl chloride	200	140	70	7	30	5-251

# Column to be used to flag recovery and RPD va	lues with an asterisk
---	-----------------------

RPD: 0 out of

10 outside limits

Spike Recovery:

0 out of

20 outside limits

07/23/03 12:07

FORM III

^{*} Values outside of QC limits

3A SPIKE RECOVERY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID

LCS

Analysis Date

05/20/03

Level:(low/med)

LOW

File ID

X140TL1.D

COMPOUND	SPIKE ADDED (µg/L)	SAMPLE CONCENTRATION (µg/L)	SPIKE CONCENTRATION (µg/L)	SPIKE % REC#	QC. LIMITS REC.
1,1-Dichloroethene	200	0	170	85	5-234
1,2-Dichloroethane	200	0	190	95	49-155
2-Butanone	200	0	200	100	20-145
Benzene	200	0	170	85	37-151
Carbon tetrachloride	200	0	180	90	70-140
Chlorobenzene	200	0	180	90	37-160
Chloroform	200	0	180	90	51-138
Tetrachloroethene	200	0	180	90	64-148
Trichloroethene	200	0	180	90	75-140
Vinyl chloride	200	0	120	60	5-251

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery:

0 out of

10 outside limits

07/23/03 12:07

FORM III

CLIENT SAMPLE ID

LCS Lab Name: SPL, Inc. Lab Code: **SPLLAF** SDG No .: 03050225 Matrix: **LEACHATE** Lab Sample ID: LCS Sample wt/vol: 5.00 (g/mL) ML Lab File ID: X140TL1.D Date Collected: Level: LOW Date Extracted: % Moisture: Date Analyzed: 5/20/03 GC Column: HP5-30meter ID: .25 (mm) Dilution Factor: Extract Volume: 10.0 (ul)

CONCENTRATION UNITS: µg/L CAS NO. COMPOUND (mg/L or ug/Kg) Q µg/L 75-35-4 1,1-Dichloroethene 170 107-06-2 1,2-Dichloroethane 190 78-93-3 2-Butanone 200 71-43-2 Benzene 170 56-23-5 Carbon tetrachloride 180 108-90-7 Chlorobenzene 180 67-66-3 Chloroform 180 127-18-4 Tetrachloroethene 180 79-01-6 Trichloroethene 180 75-01-4 Vinyl chloride 120

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140TL1.D

Report Date: 18-Jul-2003 10:45

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 20-MAY-2003

Lab File ID: X140TL1.D Calibration Time: 12:15 Lab Smp Id: LCS LCS X10

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: bam

Method File: \LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260 TCLP

745 S20 S1520S 235 S06		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
==============	========	========	========	========	======
38 Pentafluorobenzen		197428	789712	385500	-2.37
47 1,4-Difluorobenze	561648	280824	1123296	551215	-1.86
70 Chlorobenzene-d5	457682	228841	915364	451142	-1.43
95 1,4-Dichlorobenze	239906	119953	479812	231096	-3.67

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	=======	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze		4.46 5.29 8.85 12.06	5.46 6.29 9.85 13.06	4.96 5.79 9.35 12.56	-0.11 0.01 0.01 0.01

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140TL1.D

Report Date: 18-Jul-2003 10:45

SPL

RECOVERY REPORT

Client Name: Sample Matrix: LIQUID Client SDG: Fraction: VOA

Lab Smp Id: LCS LCS X10

Operator: bam SampleType: LCS Quant Type: ISTD

Level: LOW

Data Type: MS DATA SpikeList File: tclpv.spk Quant Type: IS
Sublist File: tclp.sub
Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m
Misc Info: 8260_TCLP

SPIKE	COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
	Vinyl Chloride	200.000	120.507	60.25 83.14	5-251 5-234
	1,1-Dichloroethene 2-Butanone	200.000	166.280 197.350	98.67	20-145
	Chloroform	200.000	184.770	92.39	51-138
43	1,2-Dichloroethane Benzene	200.000	189.868 174.060	94.93 87.03	49-155 37-151
	Carbon Tetrachlori	200.000	182.044	91.02	70-140
	Trichloroethene Tetrachloroethene	200.000	177.947 176.604	88.97 88.30	75-140
	Chlorobenzene	200.000	184.982	92.49	37-160
71	Chlorobenzene	200.000	184.982		92.49

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 41 1,2-Dichloroethane	500.000	491.993	98.40	71-131
\$ 61 Toluene-d8	500.000	495.755	99.15	90-108
\$ 82 Bromofluorobenzene	500.000	494.346	98.87	86-112

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MBLK

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

MBLK

Lab File ID:

X140B01.D

Date Extracted:

Date Analyzed:

5/20/03

Time Analyzed:

13:48

GC Column:

HP5-30met ID: .25

(mm)

Heated Purge: (Y/N)

N

Instrument ID:

X

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	LCS	LCS	X140TL1.D	5/20/03	13:01
02	LBLK	LBLK	X140B02.D	5/20/03	14:11
03	LBLK	LBLK	X140B03.D	5/20/03	14:34
04	16-E-1003-T1-AMS	03050225-15DMS	X140K01.D	5/20/03	15:20
05	16-E-1003-T1-A	03050225-15D	X140S03.D	5/20/03	16:07
06	16-E-1003-T1-AMSD	03050225-15DMSD	X140KD1.D	5/20/03	16:30

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK BROMOFLUOROBENZENE (BFB)

03050225

Lab Name: SPL, Inc. SDG No.:

 Lab Code:
 SPLLAF
 BFB Injection Date:
 5/15/03

 Lab File ID:
 X135BF1.D
 BFB Injection Time:
 15:50

Instrument ID: X Heated Purge: (Y/N) N

GC Column: HP5-30met ID: .25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.27
75	30.0 - 60.0% of mass 95	38.76
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.66
173	Less than 2.0% of mass 174	0.00 (0.00)1
174	Greater than 50% of mass 95	89.24
175	5.0 - 9.0% of mass 174	6.61 (7.41)1
176	95.0 - 101.0% of mass 174	87.15 (97.66)1
177	5.0 - 9.0% of mass 176	5.82 (6.68)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE	TIME ANALYZED
01	ICAL-1	ICAL-1	X135IC1.D	5/15/03	16:14
02	ICAL-2	ICAL-2	X135IC2.D	5/15/03	16:37
03	ICAL-5	ICAL-5	X135IC3.D	5/15/03	17:00
04	ICAL-10	ICAL-10	X135IC4.D	5/15/03	17:23
05	ICAL-20	ICAL-20	X135IC5.D	5/15/03	17:46
06	ICAL-50	ICAL-50	X135IC6.D	5/15/03	18:10
07	ICAL-100	ICAL-100	X135IC7.D	5/15/03	18:33
08	ICAL-150	ICAL-150	X135IC8.D	5/15/03	18:56
09	ICAL-200	ICAL-200	X135IC9.D	5/15/03	19:19

07/23/03 12:07 FORM V TUNE_BFB

Form 6 Initial Calibration Data

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID:

X

Calibration Start:

05/15/03 16:14

Heated Purge:

LAB FILE ID: ICAL-1=

N

Calibration Finish:

05/15/03 19:19

GC Column:

HP5-30meter

ICAL-2=

ID:

(mm)

.25

X135IC1.D

X135IC2.D

X135IC3.D

ICAL-5= ICAL-10=

X135IC4.D

ICAL-50=

ICAL-100=

X135IC6.D X135IC7.D

ICAL-150= ICAL-200=

X135IC8.D

X135IC9.D

ICAL-20=	X135IC5.D

COMPOUND		ICAL-1	ICAL-2	ICAL-5	ICAL-10	ICAL-20	ICAL-50	ICAL-100	ICAL-150	ICAL-200	RRF	% RSD	R ²
1,1-Dichloroethene	*	0.30569	0.3750561	0.4100516	0.4067330	0.3945015	0.3987860	0.3959945	0.3863620	0.3978072	0.38566	8.22615	•
1,2-Dichloroethane		0.3753947	0.4613474	0.4928881	0.4890605	0.5089966	0.5024390	0.50884611	0.4901068	0.5093474	0.48205	8.87448	
2-Butanone		0	0	0	0.0066437	0.0274391	0.0306143	0.03153407	0.0319109	0.0325970	0.02679	37.4532	0.99952
Benzene		1.0389113	1.0963727	1.0910175	1.0667662	1.0301124	1.0301394	1.02195053	0.9785551	0.9934148	1.03858	3.87340	
Carbon tetrachloride		0.2569118	0.3357564	0.3652939	0.3535923	0.3537448	0.3574730	0.36453143	0.3523985	0.3671127	0.34520	9.97604	
Chlorobenzene	**	1.0261796	1.0996459	1.0442074	1.0516861	1.0189964	1.0117905	1.02411214	1.0192396	1.0401693	1.03734	2.58657	**
Chloroform	*	0.6248154	0.6776167	0.7045508	0.6787012	0.6645238	0.6685963	0.66417037	0.6452598	0.6650315	0.66592	3.32493	*
Tetrachloroethene		0.2136289	0.3034425	0.3334845	0.3155023	0.3119901	0.3155297	0.32315895	0.3221138	0.3305506	0.30771	11.8528	
Trichloroethene		0.2669555	0.3573183	0.3520912	0.3444591	0.3470218	0.3530769	0.35303809	0.3384761	0.3543430	0.34075	8.2971	
Vinyl chloride		0	0.267192	0.2623339	0.2679956	0.2567649	0.2536221	0.24093331	0.2227771	0.2241785	0.24947	7.29465	*
1,2-Dichloroethane-d4		0.3583969	0.3527908	0.354663	0.3561941	0.3540036	0.3590398	0.36462636	0.3511881	0.3607512	0.35685	1.19192	
4-Bromofluorobenzene		0.4395614	0.4316762	0.438475	0.4360433	0.4308753	0.4303445	0.43266987	0.4262354	0.4187396	0.43162	1.48306	
Toluene-d8		1.08369	1.0707870	1.0687528	1.083493	1.0761242	1.0719388	1.07412031	1.0937921	1.0806721	1 07815	0.74180	

^{*} Continuing Calibration Check

^{**} System Performance Check Compounds

07/23/03 12:07

C.1

SPL

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2003 16:14 End Cal Date : 15-MAY-2003 19:19

Quant Method : ISTD Target Version : 4.00 Integrator : HP RTE

Method file : \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Cal Date : 11-Jun-2003 09:44 bethany

Calibration File Names:

Level 1: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC1.D
Level 2: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC2.D
Level 3: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC3.D
Level 4: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC4.D
Level 5: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC5.D
Level 6: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC6.D
Level 7: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC7.D
Level 8: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC8.D
Level 9: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC8.D

	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000	1 1		Coefficients		%RSD
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Curve	b	ml	m2	or R^2
	100.0000	150.0000	200.0000				1				
	Level 7	Level 8	Level 9		j		1 1				į.
											========
3 Vinyl Chloride	++++	0.26719	0.26233	0.26800	0.25676	0.25362					1
	0.24093	0.22278	0.22418		1		AVRG		0.24947		7.29465
		7777377777					[]		-		l
							[]		_11		

SPL

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2003 16:14 End Cal Date : 15-MAY-2003 19:19 Quant Method : ISTD

Target Version : 4.00
Integrator : HP RTE
Method file : \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m
Cal Date : 11-Jun-2003 09:44 bethany

	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000		Co	pefficients		*RSD
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Curve	b	ml	m2	or R^2
	100.0000 Level 7	150.0000 Level 8	200.0000 Level 9]
11 1,1-Dichloroethene	0.30569	0.37506 0.38636		0.40673	0.39450	0.39879	AVRG		0.38566		8.22615
26 2-Butanone	23374	***** 36097	+++++ 47884	485	4007	11328	LINR	0.11120	0.03344		0.99952
33 Chloroform	0.62482	0.67762 0.64526	0.70455	0.67870	0.66452	0.66860	AVRG		0.66592		3.32493
43 1,2-Dichloroethane	0.37539	0.46135 0.49011	0.49289	0.48906	0.50900	0.50244	AVRG		0.48205	*******	8.87448
44 Benzene	1.03891	1.09637 0.97856	1.09102	1.06677	1.03011	1.03014	AVRG	1	1.03858		3.87340

SPL

INITIAL CALIBRATION DATA

	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000	l ti	Coefficients		%RSD
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Curve	b ml	m2	or R^2
	100.0000 Level 7	150.0000 Level 8	200.0000 Level 9							1
45 Carbon Tetrachloride	0.25691		200	0,35359	0.35374	0.35747	==== == AVRG	0.34520		9.97604
52 Trichloroethene	0.26696		0.35209	0.34446	0.34702	0.35308	AVRG	0.34075		8.29710
69 Tetrachloroethene	0.21363	1	0.33348	0.31550	0.31199	0.31553	AVRG	0.30771		11.85276
71 Chlorobenzene	1.02618	1.09965	1.04421	1.05169	1.01900	1.01179		1.03734		2.58657
41 1,2-Dichloroethane-d4	0.35840	0.35279	0.35466	0.35619	0,35400		AVRG	0.35685		1.19192

SPL

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2003 16:14 End Cal Date : 15-MAY-2003 19:19

Quant Method : ISTD

Target Version : 4.00
Integrator : HP RTE

Method file : \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Cal Date : 11-Jun-2003 09:44 bethany

	1.0000	2.0000	5.0000	10.0000	20.0000	50.0000			Coefficients		*RSD
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Curve	b	ml	m2	or R^2
	100.0000 Level 7	150.0000 Level 8	200.0000 Level 9	1							! !
\$ 61 Toluene-d8	1.08369	1.07079		1.08349	1.07612	1.07194	==== : AVRG		1.07815		0.74180
82 Bromofluorobenzene	0.43956	0.43168 0.42624	0.43847	0.43604	0.43088	0.43034	AVRG		0.43162		1.48306

Curve	Formula	Units
	*======================================	************
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/ml	Response
1		822

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135IC1.D

Report Date: 18-Jul-2003 12:15

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 15-MAY-2003

Lab File ID: X135IC1.D Calibration Time: 18:33 Lab Smp Id: ICAL ICAL-1

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: jcb
Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=================	========	========	========	========	======
38 Pentafluorobenzen		185308	741230	375871	1.42
47 1,4-Difluorobenze	527436	263718	1054872	532673	0.99
70 Chlorobenzene-d5	428560	214280	857120	433696	1.20
95 1,4-Dichlorobenze	225240	112620	450480	229587	1.93

	200	RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze		4.47 5.30 8.87 12.08	5.47 6.30 9.87 13.08	4.98 5.81 9.38 12.59	0.18 0.15 0.09 0.12

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT.

RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135IC2.D

Report Date: 18-Jul-2003 12:15

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 15-MAY-2003

Lab File ID: X135IC2.D Calibration Time: 18:33
Lab Smp Id: ICAL ICAL-2

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: jcb

Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W ALL

COMPOUND	STANDARD	AREA LOWER	LIMIT UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen	370615	185308	741230	369678	-0.25
47 1,4-Difluorobenze	527436	263718	1054872	525232	-0.42
70 Chlorobenzene-d5	428560	214280	857120	431548	0.70
95 1,4-Dichlorobenze	225240	112620	450480	225851	0.27

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
===============	========	========	========	========	
38 Pentafluorobenzen	107 7 7040	4.47	5.47	4.97	0.01
47 1,4-Difluorobenze	5.80	5.30	6.30	5.81	0.01
70 Chlorobenzene-d5	9.37	8.87	9.87	9.37	0.01
95 1,4-Dichlorobenze	12.58	12.08	13.08	12.58	0.00

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135IC3.D

Report Date: 18-Jul-2003 12:15

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 15-MAY-2003

Lab File ID: X135IC3.D Calibration Time: 18:33

Lab Smp Id: ICAL ICAL-5

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: jcb Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m Misc Info: 8260_W_ALL

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen	370615	185308	741230	363125	-2.02
47 1,4-Difluorobenze	527436	263718	1054872	518076	-1.77
70 Chlorobenzene-d5	428560	214280	857120	421219	-1.71
95 1,4-Dichlorobenze	225240	112620	450480	224732	-0.23

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	=======	========	========	======
38 Pentafluorobenzen	4.97	4.47	5.47	4.97	0.04
47 1,4-Difluorobenze	5.80	5.30	6.30	5.81	0.03
70 Chlorobenzene-d5	9.37	8.87	9.87	9.36	-0.05
95 1,4-Dichlorobenze	12.58	12.08	13.08	12.58	0.01

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

Data File: \LAFTGT1\ee\chem\X.i\X030515.b\X135IC4.D

Report Date: 18-Jul-2003 12:15

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 15-MAY-2003

Lab File ID: X135IC4.D Calibration Time: 18:33

Lab Smp Id: ICAL ICAL-10

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: jcb Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W ALL

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen	370615	185308	741230	365006	-1.53
47 1,4-Difluorobenze	527436	263718	1054872	518436	-1.7
70 Chlorobenzene-d5	428560	214280	857120	422802	-1.3
95 1,4-Dichlorobenze	225240	112620	450480	224045	-0.53

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze		4.47 5.30	5.47 6.30	4.97 5.80	-0.02 -0.02
70 Chlorobenzene-d5 95 1,4-Dichlorobenze	9.37 12.58	8.87 12.08	9.87 13.08	9.37 12.57	-0.01 -0.01

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135IC5.D

Report Date: 18-Jul-2003 12:15

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 15-MAY-2003 Instrument ID: X.i

Calibration Time: 18:33 Lab File ID: X135IC5.D

Lab Smp Id: ICAL ICAL-20

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: jcb
Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W ALL

		AREA	LIMIT		CONTRACTOR SOME
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	=======	======
38 Pentafluorobenzen	370615	185308	741230	365081	-1.49
47 1,4-Difluorobenze	527436	263718	1054872	522460	-0.94
70 Chlorobenzene-d5	428560	214280	857120	425318	-0.76
95 1,4-Dichlorobenze	225240	112620	450480	225409	0.08

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen	4.97	4.47	5.47	4.97	0.00
47 1,4-Difluorobenze	5.80	5.30	6.30	5.80	0.00
70 Chlorobenzene-d5	9.37	8.87	9.87	9.37	0.00
95 1,4-Dichlorobenze	12.58	12.08	13.08	12.58	0.00

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135IC6.D

Report Date: 18-Jul-2003 12:16

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 15-MAY-2003

Lab File ID: X135IC6.D Calibration Time: 18:33

Lab Smp Id: ICAL ICAL-50

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: jcb
Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W ALL

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=============	========	========	=======	========	======
38 Pentafluorobenzen	370615	185308	741230	370023	-0.16
47 1,4-Difluorobenze	527436	263718	1054872	530468	0.57
70 Chlorobenzene-d5	428560	214280	857120	431617	0.71
95 1,4-Dichlorobenze	225240	112620	450480	226351	0.49

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	=======	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze	9.37	4.47 5.30 8.87 12.08	5.47 6.30 9.87 13.08	4.97 5.80 9.36 12.58	0.00 0.00 -0.06 0.00

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135IC7.D

Report Date: 18-Jul-2003 12:16

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 15-MAY-2003 Instrument ID: X.i

Calibration Time: 18:33 Lab File ID: X135IC7.D

Lab Smp Id: ICAL ICAL-100

Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: jcb
Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W ALL

		AREA	LIMIT		MEDITE VILLE.
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	=======	========	========	======
38 Pentafluorobenzen	370615	185308	741230	370615	0.00
47 1,4-Difluorobenze	527436	263718	1054872	527436	0.00
70 Chlorobenzene-d5	428560	214280	857120	428560	0.00
95 1,4-Dichlorobenze	225240	112620	450480	225240	0.00
35 1,4-Dichiolobenze	223240	112020	430400	223240	0.

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========		========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze	4.97 5.80 9.37 12.58	4.47 5.30 8.87 12.08	5.47 6.30 9.87 13.08	4.97 5.80 9.37 12.58	0.00 0.00 0.00

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135IC8.D

Report Date: 18-Jul-2003 12:16

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 15-MAY-2003

Lab File ID: X135IC8.D Calibration Time: 18:33

Lab Smp Id: ICAL ICAL-150
Analysis Type: VOA Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: jcb

Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W ALL

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=====================	========	========	========	========	
38 Pentafluorobenzen	370615	185308	741230	377060	1.74
47 1,4-Difluorobenze	527436	263718	1054872	534797	1.40
70 Chlorobenzene-d5	428560	214280	857120	430708	0.50
95 1,4-Dichlorobenze	225240	112620	450480	223890	-0.60

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	=======	========	========	========	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5		4.47 5.30 8.87	5.47 6.30 9.87	4.97 5.81 9.36	0.04 0.03 -0.04
95 1,4-Dichlorobenze	12.58	12.08	13.08	12.58	0.02

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135IC9.D

Report Date: 18-Jul-2003 12:16

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Calibration Date: 15-MAY-2003

Lab File ID: X135IC9.D Calibration Time: 18:33

Lab Smp Id: ICAL ICAL-200

Analysis Type: VOA Level: LOW Quant Type: ISTD Sample Type: WATER

Operator: jcb

Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W ALL

		AREA	LIMIT		4190 (5355 535 63
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	=======	======
38 Pentafluorobenzen	370615	185308	741230	367242	-0.91
47 1,4-Difluorobenze	527436	263718	1054872	519002	-1.60
70 Chlorobenzene-d5	428560	214280	857120	425773	-0.65
95 1,4-Dichlorobenze	225240	112620	450480	219719	-2.45

		RT I	LIMIT		1
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	=======	========	========	========	======
38 Pentafluorobenzen	4.97	4.47	5.47	4.97	0.09
47 1,4-Difluorobenze	5.80	5.30	6.30	5.80	-0.03
70 Chlorobenzene-d5	9.37	8.87	9.87	9.37	-0.02
95 1,4-Dichlorobenze	12.58	12.08	13.08	12.57	-0.01
95 1,4-Dichlorobenze	12.58	12.08	13.08	12.57	-0.

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135ICV.D

Report Date: 18-Jul-2003 12:16

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 15-MAY-2003 Instrument ID: X.i

Calibration Time: 18:33 Lab File ID: X135ICV.D

Lab Smp Id: ICV ICV-100

Analysis Type: VOA Level: LOW

Sample Type: WATER Quant Type: ISTD

Operator: jcb
Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W ALL

		AREA	LIMIT		70000-0000
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen	370615	185308	741230	369908	-0.19
47 1,4-Difluorobenze	527436	263718	1054872	531766	0.82
70 Chlorobenzene-d5	428560	214280	857120	432791	0.99
95 1,4-Dichlorobenze	225240	112620	450480	230329	2.26

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen		4.47	5.47	4.97	-0.03
47 1,4-Difluorobenze	5.80	5.30	6.30	5.80	-0.02
70 Chlorobenzene-d5	9.37	8.87	9.87	9.37	-0.02
95 1,4-Dichlorobenze	12.58	12.08	13.08	12.57	-0.01

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135ICV.D

Report Date: 18-Jul-2003 12:16

SPL

RECOVERY REPORT

Client SDG: Client Name: Fraction: VOA Sample Matrix: LIQUID

Lab Smp Id: ICV ICV-100

Level: LOW Data Type: MS DATA Operator: jcb SampleType: LCS Quant Type: ISTD SpikeList File: 624.spk

Sublist File: tclp.sub Method File: \\LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m Misc Info: 8260_W_ALL

Ug/L		olo	CONC	CONC		
2 Chloromethane 3 Vinyl Chloride 4 Bromomethane 100.000 45.3145 4 Bromomethane 100.000 46.8401 7 Trichlorofluoromet 11,1-Dichloroethene 100.000 11,1-Dichloroethene 100.000 84.4778 84.48 17 Methylene Chloride 100.000 3 Chloroform 100.000 3 Chloroform 100.000 3 Chloroform 100.000 3 Chloroform 100.000 3 Chloroform 100.000 3 Chloroform 100.000 46.8401 46.84 48 46.84 4778 84.48 84.48 84.48 84.48 84.48 84.48 84.48 84.48 84.49 84.49 85.40 86.66 87.2-Dichloroethane 100.000 88.4068 88.11 89.10 88.11 88.11 88.11 89.10 88.11 88.11 89.10 88.11 88.11 89.10 88.11 88.11 89.10 89	LIMIT	RECOVERED			COMPOUND	SPIKE
3 Vinyl Chloride			ug/L	ug/L		
3 Vinyl Chloride 100.000 45.3145 45.31 4 Bromomethane 100.000 46.8401 46.84 5 Chloroethane 100.000 76.9416 76.94 7 Trichlorofluoromet 100.000 76.67 76.67 11 1,1-Dichloroethene 100.000 84.4778 84.48 17 Methylene Chloride 100.000 87.4223 87.42 20 trans-1,2-Dichloro 100.000 91.4294 91.43 22 1,1-Dichloroethane 100.000 92.4959 92.50 33 Chloroform 100.000 94.6544 94.65 42 1,1,1-Trichloroeth 100.000 96.0634 96.06 43 1,2-Dichloroethane 100.000 99.0773 99.08 44 Benzene 100.000 94.4396 94.44 48 1,2-Dichloropropan 100.000 97.2007 97.20 52 Trichloroethene 100.000 97.2007 97.20 52 Trichloroethylvinyl 100.000 95.6468 95.65 63 1,1,2-Trichloroeth 100.000 95.6468 95.65	0-27	52.63	52.6252	100.000	Chloromethane	2
4 Bromomethane 5 Chloroethane 7 Trichlorofluoromet 100.000 76.6703 76.67 11,1-Dichloroethene 100.000 84.4778 84.48 17 Methylene Chloride 20 trans-1,2-Dichloro 33 Chloroform 100.000 34 Chloroethane 30 Chloroform 100.000 31 Chloroform 100.000 32 Chloroform 100.000 33 Chloroform 100.000 34 Chloroform 100.000 34 Chloroform 100.000 35 Chloroform 100.000 36 Chloroform 100.000 37 Chloroethane 100.000 38 Chloroform 100.000 39 Chloroform 100.000 39 Chloroform 100.000 39 Chloroform 100.000 30 Chloroform 100.000 31 Chloroform 31 Chloroethane 32 Carbon Tetrachlori 34 Carbon Tetrachlori 35 Carbon Tetrachlori 36 Carbon Tetrachlori 37 Chloroethene 38 Chloroethylvinyl 39 Chloroethoropropan 30 Chloroform 30 Chloroethoroethane 30 Chloroethoroethane 30 Chloroethoroethane 30 Chloroethoroethane 30 Chloroethoroethane 30 Chloroethoroethane 30 Chloroethylvinyl 30 Chloroethoroethane 30 Chloroethylvinyl 30 Chloroethoroethane 30 Chloroethylvinyl 30 Chloroethoroethane 30 Chloroethylvinyl 30 Chloroethylvinyl 30 Chloroethylvinyl 30 Chloroethoroethane 30 Chloroethylvinyl 30 Chloroethoroethane 30 Chloroethylvinyl 30 Chloroethoroethane 30 Chloroethylvinyl 30 Chloroethane 30 Chloroethylvinyl 30 Chloroethane 30 Chloroethylvinyl 30 Chloroethane 3	0-25	45.31				
5 Chloroethane 100.000 76.9416 76.94 7 Trichlorofluoromet 100.000 76.6703 76.67 11 1,1-Dichloroethene 100.000 84.4778 84.48 17 Methylene Chloride 100.000 87.4223 87.42 20 trans-1,2-Dichloro 100.000 91.4294 91.43 22 1,1-Dichloroethane 100.000 92.4959 92.50 33 Chloroform 100.000 94.6544 94.65 42 1,1,1-Trichloroeth 100.000 99.0773 99.08 44 Benzene 100.000 99.0773 99.08 44 Benzene 100.000 88.1068 88.11 45 Carbon Tetrachlori 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 <td>0-24</td> <td>46.84</td> <td></td> <td></td> <td></td> <td></td>	0-24	46.84				
7 Trichlorofluoromet 100.000 76.6703 76.67 11 1,1-Dichloroethene 100.000 84.4778 84.48 17 Methylene Chloride 100.000 87.4223 87.42 20 trans-1,2-Dichloro 100.000 91.4294 91.43 22 1,1-Dichloroethane 100.000 92.4959 92.50 33 Chloroform 100.000 94.6544 94.65 42 1,1,1-Trichloroeth 100.000 96.0634 96.06 43 1,2-Dichloroethane 100.000 99.0773 99.08 44 Benzene 100.000 88.1068 88.11 45 Carbon Tetrachlori 100.000 97.2007 97.20 52 Trichloroethene 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 95.6468 95.65 60 trans-1,3-Dichloropr 100.000 95.6468 95.65 65 1,1,2-Trichloroeth 100.000 95.5488 95.55 65 10bromochlorometha 100.000 95.5488 95.55 65 10bromochlorometha 100.000 94.9480 94.95 98.55 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	14-23	76.94	76.9416			
11 1,1-Dichloroethene 17 Methylene Chloride 100.000 10	17-18	76.67	76.6703			
17 Methylene Chloride 100.000 87.4223 87.42 20 trans-1,2-Dichloro 100.000 91.4294 91.43 22 1,1-Dichloroethane 100.000 92.4959 92.50 33 Chloroform 100.000 94.6544 94.65 42 1,1,1-Trichloroeth 100.000 96.0634 96.06 43 1,2-Dichloroethane 100.000 99.0773 99.08 44 Benzene 100.000 88.1068 88.11 45 Carbon Tetrachlori 100.000 94.4396 94.44 48 1,2-Dichloropropan 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628	0-23					
20 trans-1,2-Dichloro 100.000 91.4294 91.43 22 1,1-Dichloroethane 100.000 92.4959 92.50 33 Chloroform 100.000 94.6544 94.65 42 1,1,1-Trichloroeth 100.000 96.0634 96.06 43 1,2-Dichloroethane 100.000 99.0773 99.08 44 Benzene 100.000 88.1068 88.11 45 Carbon Tetrachlori 100.000 94.4396 94.44 48 1,2-Dichloropropan 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 100.102 100.10 50 trans-1,3-Dichloro 100.000 95.6468 95.65 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 63 1,1,2-Trichloroeth 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 95.9380 95.94 75 Bromoform 100.000 95.9380 95.9	0-22					
22 1,1-Dichloroethane 33 Chloroform 42 1,1,1-Trichloroeth 43 1,2-Dichloroethane 44 Benzene 45 Carbon Tetrachlori 47 1,2-Dichloropropan 48 1,2-Dichloropropan 49 1,2-Dichloroethane 40 1,2-Dichloropropan 40 1,2-Dichloropropan 41 1,2-Dichloropropan 42 1,1,1-Trichloroethene 43 1,2-Dichloropropan 44 Benzene 45 Carbon Tetrachlori 46 1,2-Dichloropropan 47 1,2-Dichloropropan 48 1,2-Dichloropropan 49 1,1,2-Trichloroeth 40 1,2-Dichloropr 40 1,2-Dichloropr 41 1,2 1,2-Trichloroeth 42 1,1,1-Trichloroeth 43 1,2-Trichloroeth 44 Benzene 45 1,2-Trichloropr 46 1,3-Dichloropr 47 1,1,2-Trichloroeth 48 1,2-Dichloroeth 49 1,2-Trichloroeth 40 1,2-Dichloroeth 41 1,2-Trichloroeth 41 1,2-Trichloroeth 42 1,1,1-Trichloroeth 43 1,2-Trichloroeth 44 102.48 45 1,1,2-Trichloroeth 45 1,1,2-Trichloroeth 46 1,1,2-Trichloroeth 47 1,1-Trichloroeth 48 1,2-Dichloroeth 49 1,1,2,2-Tetrachlor 40 100.000 40 100.102 40 114.218 414.22 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.22 410 114.218 410 114.22 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114.22 410 114.218 410 114	54-15	91.43				
33 Chloroform 100.000 94.6544 94.65 42 1,1,1-Trichloroeth 100.000 96.0634 96.06 43 1,2-Dichloroethane 100.000 99.0773 99.08 44 Benzene 100.000 88.1068 88.11 45 Carbon Tetrachlori 100.000 94.4396 94.44 48 1,2-Dichloropropan 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 95.6468 95.65 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 93.5628 93.56 73 Ethylbenzene 100.000 93.5628 93.56 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96	59-15	92.50				
42 1,1,1-Trichloroeth 100.000 96.0634 96.06 43 1,2-Dichloroethane 100.000 99.0773 99.08 44 Benzene 100.000 88.1068 88.11 45 Carbon Tetrachlori 100.000 94.4396 94.44 48 1,2-Dichloropropan 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 100.102 100.10 59 cis-1,3-Dichloro 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 98.5499 98.55 67 Ethylbenzene 100.000 93.5628 93.56 75 Bromoform 100.000 95.9380 95.94 78 Itylbenzene 100.000 95.9380 95.94 78 Itylbenzene 100.000 98.9623 98.96 75 Bromoform 100.000 98.9623 98.96 <	51-13	94.65				
43 1,2-Dichloroethane 100.000 99.0773 99.08 44 Benzene 100.000 88.1068 88.11 45 Carbon Tetrachlori 100.000 94.4396 94.44 48 1,2-Dichloropropan 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 100.102 100.10 59 cis-1,3-Dichloropr 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 94.9480 94.95 67 Ethylbenzene 100.000 93.5628 93.56 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	52-16					
44 Benzene 100.000 88.1068 88.11 45 Carbon Tetrachlori 100.000 94.4396 94.44 48 1,2-Dichloropropan 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 100.102 100.10 59 cis-1,3-Dichloropr 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 102.871 102.87 62 Toluene 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 94.9480 94.95 67 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	49-15					
45 Carbon Tetrachlori	37-15	88.11				
48 1,2-Dichloropropan 100.000 97.2007 97.20 52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 100.102 100.10 59 cis-1,3-Dichloropr 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 102.871 102.87 62 Toluene 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 94.9480 94.95 69 Tetrachloroethene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	70-14	94.44	94.4396	100.000	Carbon Tetrachlori	45
52 Trichloroethene 100.000 92.2288 92.23 56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 100.102 100.10 59 cis-1,3-Dichloropr 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 102.871 102.87 62 Toluene 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	0-23	97.20	97.2007			
56 2-Chloroethylvinyl 100.000 114.218 114.22 51 Bromodichlorometha 100.000 100.102 100.10 59 cis-1,3-Dichloror 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 102.871 102.87 62 Toluene 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 102.484 102.48 69 Tetrachloroethene 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	71-15	92.23	92.2288	100.000		
51 Bromodichlorometha 100.000 100.102 100.10 59 cis-1,3-Dichloropr 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 102.871 102.87 62 Toluene 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 102.484 102.48 69 Tetrachloroethene 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	0-30	114.22				
59 cis-1,3-Dichloropr 100.000 95.6468 95.65 60 trans-1,3-Dichloro 100.000 102.871 102.87 62 Toluene 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 102.484 102.48 69 Tetrachloroethene 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	35-15		100.102	100.000		
60 trans-1,3-Dichloro 100.000 102.871 102.87 62 Toluene 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 102.484 102.48 69 Tetrachloroethene 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	0-22	95.65	95.6468	100.000	cis-1,3-Dichloropr	59
62 Toluene 100.000 95.5488 95.55 63 1,1,2-Trichloroeth 100.000 98.5499 98.55 67 Dibromochlorometha 100.000 102.484 102.48 69 Tetrachloroethene 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	17-18	102.87				
67 Dibromochlorometha 100.000 102.484 102.48 69 Tetrachloroethene 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	47-15	95.55	95.5488	100.000		
69 Tetrachloroethene 100.000 94.9480 94.95 71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	52-15	98.55	98.5499	100.000	1,1,2-Trichloroeth	63
71 Chlorobenzene 100.000 93.5628 93.56 73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	53-14	102.48	102.484	100.000		
73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	64-14	94.95	94.9480	100.000	Tetrachloroethene	69
73 Ethylbenzene 100.000 89.3633 89.36 75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	37-16					
75 Bromoform 100.000 95.9380 95.94 78 1,1,2,2-Tetrachlor 100.000 98.9623 98.96 96 1,3-Dichlorobenzen 100.000 89.9996 90.00	37-16	89.36	89.3633			73
96 1,3-Dichlorobenzen 100.000 89.9996 90.00	45-16		95.9380			
96 1,3-Dichlorobenzen 100.000 89.9996 90.00	46-15		98.9623	100.000	1,1,2,2-Tetrachlor	78
	59-15	90.00	89.9996	100.000		
	18-18	96.45	96.4514	100.000	1,4-Dichlorobenzen	93
98 1,2-Dichlorobenzen 100.000 90.8756 90.88	18-19	90.88	90.8756	100.000	1,2-Dichlorobenzen	98

Data File: \\LAFTGT1\ee\chem\X.i\X030515.b\X135ICV.D

Report Date: 18-Jul-2003 12:16

SPL

RECOVERY REPORT

Client SDG: Client Name: Fraction: VOA Sample Matrix: LIQUID

Lab Smp Id: ICV ICV-100

Operator: jcb Level: LOW Data Type: MS DATA SpikeList File: 624.spk SampleType: LCS Quant Type: ISTD

Sublist File: tclp.sub
Method File: \LAFTGT1\ee\chem\X.i\X030515.b\X8260w.m

Misc Info: 8260 W_ALL

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 41 1,2-Dichloroethane	50.0000	51.2019	102.40	71-131
\$ 61 Toluene-d8	50.0000	50.1673	100.33	90-108
\$ 82 Bromofluorobenzene	50.0000	50.6683	101.34	86-112

5A VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK BROMOFLUOROBENZENE (BFB)

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

BFB Injection Date:

5/20/03

Lab File ID:

X140BF1.D

BFB Injection Time:

Instrument ID:

Heated Purge: (Y/N)

11:51

GC Column:

X

(mm)

HP5-30met ID: .25

n/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.51
75	30.0 - 60.0% of mass 95	39.17
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.71
173	Less than 2.0% of mass 174	0.00 (0.00)1
174	Greater than 50% of mass 95	91.58
175	5.0 - 9.0% of mass 174	7.13 (7.78)1
176	95.0 - 101.0% of mass 174	90.22 (98.52)1
177	5.0 - 9.0% of mass 176	5.93 (6.58)2

1-Value is % mass

174

2-Value is % mass

176

N

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV-100	CCV-100	X140CC1.D	5/20/03	12:15
02	LCS	LCS	X140TL1.D	5/20/03	13:01
03	MBLK	MBLK	X140B01.D	5/20/03	13:48
04	LBLK	LBLK	X140B02.D	5/20/03	14:11
05	LBLK	LBLK	X140B03.D	5/20/03	14:34
06	16-E-1003-T1-AMS	03050225-15DMS	X140K01.D	5/20/03	15:20
07	16-E-1003-T1-A	03050225-15D	X140S03.D	5/20/03	16:07
08	16-E-1003-T1-AMSD	03050225-15DMSD	X140KD1.D	5/20/03	16:30

07/23/03 12:07

FORM V

TUNE_BFB

7 CONTINUING CALIBRATION CHECK

Lab Name:

SPL, Inc.

SDG No .:

03050225

Lab Code:

SPLLAF

Instrument ID:

X

Calibration Date:

5/20/03

Time:

12:15 PM

Lab File ID:

X140CC1.D

HP5-30meter

Init. Calib. Dates:

5/15/03

5/15/03

Heated Purge: (Y/N)

Init. Calib. Times:

16:14

19:19

GC Column:

N

ID: .25

(mm)

THEO **RCVR** MAX CURVE AVG. STD. MIN MAX %D2 %D² RF/RRF RF/RRF RRF %D %D CONC CONC COMPOUND TYPE 0.373 3.257 20.0 0.38566 AVRG 1,1-Dichloroethene 0.48205 0.500 3.658 **AVRG** 1,2-Dichloroethane 100 99 1.0 10RDR 2-Butanone 0.977 5.947 AVRG 1.03858 Benzene 0.200 0.34520 0.346 **AVRG** Carbon tetrachloride 1.03734 1.023 0.300 AVRG Chlorobenzene AVRG 0.66592 0.645 3.116 20.0 Chloroform 0.313 1.866 AVRG 0.30771 Tetrachloroethene 0.34075 0.333 2.377 AVRG Trichloroethene 0.24947 0.222 11.132 20.0 AVRG Vinyl chloride AVRG 0.35685 0.353 1.188 1,2-Dichloroethane-d4 0.516 0.434 AVRG 0.43162 4-Bromofluorobenzene 1.074 0.394 1.07815 Toluene-d8 AVRG

^{*} Continuing Calibration Check

^{**} System Performance Check Compounds

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140CC1.D

Report Date: 18-Jul-2003 12:22

SPL

CONTINUING CALIBRATION COMPOUNDS

Injection Date: 20-MAY-2003 12:15 Instrument ID: X.i

Init. Cal. Date(s): 15-MAY-2003 15-MAY-2003 Init. Cal. Times: 16:14 19:19 Lab File ID: X140CC1.D

Analysis Type: WATER

Lab Sample ID: CCV CCV-100 Quant Type: ISTD Method: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

		1			MIN	ű	MAX
	COMPOUND	9	RRF	RF100	RRF	%D	%D
==							
	3 Vinyl Chloride	1	0.24947	0.22170	0.010	-11.1	20.0
	11 1,1-Dichloroethene	1	0.38566	0.37310	0.010	-3.3	20.0
	26 2-Butanone	9	98.86803	100	0.010	1.1	50.0
	33 Chloroform	1	0.66592	0.64517	0.010	-3.1	20.0
	43 1,2-Dichloroethane	1.	0.48205	0.49968	0.010	3.7	50.0
	44 Benzene	1	1.03858	0.97681	0.010	-5.9	50,0
	45 Carbon Tetrachloride	L	0.34520	0.34589	0.010	0.2	50.0
ĺ	52 Trichloroethene	Ľ	0.34075	0.33265	0.010	-2.4	50.0
Ì	69 Tetrachloroethene	Ĺ	0.30771	0.31345	0.010	1.9	50.0
Ì	71 Chlorobenzene	16	1.03734	1.02302	0.300	-1.4	50.0
\$	41 1,2-Dichloroethane-d4	ĺ.	0.35685	0.35261	0.010	-1.2	50.0
\$	61 Toluene-d8	Û	1.07815	1.07391	0.010	-0.4	50.0
\$	82 Bromofluorobenzene		0.43162	0.43385	0.010	0.5	50.0
_							

Data File: \\LAFTGT1\ee\chem\X.i\X030520.b\X140CC1.D

Report Date: 18-Jul-2003 12:22

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: X.i Lab File ID: X140CC1.D Calibration Date: 20-MAY-2003

Calibration Time: 08:50

Lab Smp Id: CCV CCV-100 Analysis Type: VOA

Level: LOW

Quant Type: ISTD

Sample Type: WATER

Operator: bam

Method File: \\LAFTGT1\ee\chem\X.i\X030520.b\X8260w.m

Misc Info: 8260 W ALL

		AREA	LIMIT		4247 2547 257 257 257 257
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
38 Pentafluorobenzen	405001	202501	810002	394856	-2.50
47 1,4-Difluorobenze	576293	288147	1152586	561648	-2.54
70 Chlorobenzene-d5	481172	240586	962344	457682	-4.88
95 1,4-Dichlorobenze	249744	124872	499488	239906	-3.94

		RT I	LIMIT		S- 1.4===
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	=======	======
38 Pentafluorobenzen 47 1,4-Difluorobenze 70 Chlorobenzene-d5 95 1,4-Dichlorobenze	4.96 5.80 9.35 12.56	4.46 5.30 8.85 12.06	5.46 6.30 9.85 13.06	4.96 5.79 9.35 12.56	-0.00 -0.11 -0.07 -0.00

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

8 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab File ID (Standard):

X140CC1.D

Date Analyzed:

5/20/03

Instrument ID:

X

Time Analyzed:

12:15

GC Column:

HP5-30met ID: .25

(mm)

Heated Purge: (Y/N)

Ν

	IS1		IS2 (DFB)		IS3		IS4	
	AREA#	RT #	AREA#	RT #	AREA#	RT #	AREA#	RT #
12 HOUR STD	394856	4.960	561648	5.790	457682	9.340	239906	12.560
UPPER LIMIT	789712	5.460	1123296	6.290	915364	9.840	479812	13.060
LOWER LIMIT	197428	4.460	280824	5.290	228841	8.840	119953	12.060
SAMPLE								
NO.								
LCS	385500	4.950	551215	5.790	451142	9.340	231096	12.560
MBLK	389451	4.960	552114	5.790	452911	9.350	231840	12.560
LBLK	384284	4.960	551440	5.790	452739	9.350	233396	12.560
LBLK	377053	4.960	541462	5.790	441378	9,350	229281	12.560
16-E-1003-T1-AMS	377428	4.960	536152	5.790	438509	9.350	226712	12.560
16-E-1003-T1-A	366120	4.960	521105	5.790	427747	9.350	218659	12.560
16-E-1003-T1-AMSD	371118	4.960	529886	5.790	433634	9,350	223515	12.560

IS1 = Pentafluorobenzene

IS2 (DFB) = 1,4-Difluorobenzene

IS3 = Chlorobenzene-d5

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area AREA LOWER LIMIT = -50% of internal standard area RT UPPER LIMIT = +0.50 minutes of internal standard RT RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

^{*} Values outside of QC limits.

8 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab File ID (Standard):

X140CC1.D

Date Analyzed:

5/20/03

Instrument ID:

X

Time Analyzed:

12:15

GC Column:

HP5-30met ID: .25

(mm)

Heated Purge: (Y/N)

N

12 HOUR STD UPPER LIMIT LOWER LIMIT			
SAMPLE NO.			
1 LCS			
2 MBLK		j)	
3 LBLK	(1)		
4 LBLK			
5 16-E-1003-T1-AMS	Y .		
6 16-E-1003-T1-A	ľ		
7 16-E-1003-T1-AMSD		Î.	

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

07/23/03 12:12

FORM VIII

SW8260B

^{*} Values outside of QC limits.

STANDARD RECEPT LOGBOOK

ID Number	Date	Name of	Conc.	Vendor/	Lot	Exp. Date	Storage	Discard	Analyst
	Received	Standard		Manufacture	Number		Location	Date	Initials
95026-41-01	10-4-01	GPA 624 mixA @	Zoough	Supeles	4300097	04	00	n	0.5
95026-41-02	10-4-01	EPA 624 mix 8 @	2000USH	Supello	LA 99032	cet/202	UOI. Std. frage	1	20
95026-41-03	10-15-01	5242-VCX (2)	2000.015/m	L Protozef	PIUI6918cci	10/09/02	Vol. Std. Freez	R	A
95026-41-04	10-15-01	5022-BH (3)	2000. July	Protocol	P101050300	3 10/09/03	L 11		B
95026-41-05	10-15-01	SPL-82601X-170	Mixed	Protocol	L1010822	oci ajlozi	۱۱ ا		AL.
95026-41-de	10-15-01	MDM-MIX-3 2	1000.Tul			3 10/09/0			£ '
95626-41-07	10-15-01	5242-RY @	2000. Quim	LProtocol	40101188	03 04/07/	٦٤ ١١		B
95026-41-08	10-17-01	MDM-Mix-3(3)	///				a UP. Std. A	RUR	R 3
95026-41-09	10-17-01	SA-82601X-172	Mixed	Protocol	_L/010	10001 04	08/02 ")	B
95026-41-10	11/30/01	SPL-8260-15						exR	R
95026-41-11	11/30/01	mom - mix-3(2)						>	E J
95026-41-12	11/30/01	SPL-82601X-170	/ H. I	() 1 A	, ,	to 1 0426/c	: 4		£
95026-41-13	11/30/01	41011106002 (st)	2000 MM	Protocol	5242-R4	05/2402	U		R
95026-41-14	1/30/01	PIØ111210030	. / /	A . A .	5242-VCX	1	1(包
95026-41-15	1 1	5022 - BHL WARNEY	1/ .1	0 . 1		12/03/0	_ "		B
, , , , , ,	12/03/01		2500 ml				0.1-	2	B
95026-41-17	12/03/01	SPG-8260IX-170	1.101	0 1 7	777		St. St. Freeze		R
	12/03/01	. /.\	1000 m/mL				(of Sta Freigh		8
95026-41-19	12/03/01	0 0	// /	Potocol			0		R
95026-41-20	01/04/02	TCLP-500 UPA	// : .		70-	12/2004	11 /		P3
95026-41-21	01/08/02	5PL-8261X-17	mixed		101113005		11.		XX.
15026-41-22	01/08/02	5PL-8240-15 @				1 1	1(DX S
95026-41-23	01/08/02	mom-mix-300	1000 walmit	Restorat 1	LIDENOLIO I	01/04/03/	,i ·	5	k of
95026-41-24	21/08/02	5242-R4@	muslant	Protocol 1	OTHER	07/03/0	11		1

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	ID Number	Date	Name of	Conc.	Vendor/	Lot	Exp. Date	Storage	Discard	Analyst
		Received	Standard		Manufacture			Location	Date	Initials
	95026-46-01	4/17/03	X-SPL-5242R	2000 mg/mL	Protocol	2103040502	4-10-04	VOL Std Free	er	BAM
	05026-46-02	1/17/03	MDM-MIK-3R	2000 Mmc	Protocol	210364680	4 4-10-04	4		BKM
(2)	95026-46-03	5-22-03	5-2975	1000 45/ML	Protocol	R1030521001	5-20-04	1(25
(3)	95026-46-04	6-3-03	X-59L5242B	2000 15/mL	Protocol	B103040300b	10-1-04))		42
(3)	95026-46-05	6-3-63	mon-mix-3e	2000 ug/ml		RINGCHOSCON	6-1-04	11		£2
(3)	95026-46-06	6-3-63	CLPV-MH	2000 45/m	Protocol	RIOZOYZKOS	6-1-04	11		2-8
(2)	95026-46-07	6-3-03	5022 - BH	2000 45/mc	1 .	R1030331002	6-1-04	11		bol .
(2)	95026-46-08	6-3-03	CLPV-5H-5	2500 49/mL	Protocol	RIGEOZZIONA	6-1-04	(1		98
(4)	95026-46-09	6-3-03	SPL-82601X-17	Mix	Protocol	RINBORROS	11-29-03	i \		80
(2)	95026-46-10	63-03	5242 - R4	2000 45/mL		R1636121610	11-29-03	H		J-X
	95026-46-11	6-3-03	SPL-8260-15	2500 45/ML		P102073008		1)		Joh
(5)	95026-46-12	6-17-03	ETranol Standard	2000 40/Mi	I I		11-06	j (705
(95026-46-13	6-21-03	Ethoral 757. Stoded	9507.4/	Sherma Corp.	F1658	6-04	4_		JUS
~ ^	95026-46-14	7-3-03	5242-VCX	2000 ug/m		R1630416004	7-1-04	18		O.L
(3)				2000 45/11		B1030416664	10.0	٠,		JA S
									K	, ,
								=		
001										
County County		100 A	San San San San San San San San San San	- Carl Resolution In	MAN EN CONTRACT A CONTRACT	But Cata Photos 2	Mark Company	elo moterno alestes. La	and the second	est story appleared

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	ID Number	Date	Name of	Conc.	Vendor/	Lot	Exp. Date	Storage	Discard	Analyst
		Received	Standard		Manufacture	Number		Location	Date	Initials
(2)	95026-45-01	1-31-03	5242-VCX	2000 49/mx	Protocol	L102042365	1-24-04	Vou Std Free	ec	100
(2)	95026-45-02	1-31-63	MDM-MIX-3R	2000 ug/mL	Protocol	RIOZIONZOS	1-24-04	11		28
(1)	95026-45-03	1-31-63	5-3800	1000 ug/mL	Protocol	B103012108	2-23-63	*1		QX
(4)	950210-45-04	1-31-03	SPL-8040IX-17	Mixel	Pretocall	R1030122005	7-23-03	1 \		12
(3)	95026-45-05	1-31-63	X-SPL-5242R	7000 ug/ml	Pritocal	RIOZ LIGION	1-24-04	()		los .
(3)	95026-45-06	3-3-03	SPL-8210 IS	2500 yg/ml	Protocol	R102073003	2-27-04	11		J-29
(i)	95026-45-07	3-3-63		2000 49/ML	Protocol	PROZIDICAY	2-27-04	11		15
	95026-45-08	33-03	5022-BH	2000 yg /ml	Protocol	21030116004	2-27-04	11		98
(4)	95026-45-09	3-3-03	SPL-82160TX-17	Mixed	Protocol	R1030122005	8-26-03	()		Jes .
	95026-45-10	3-3-03	CLPV-SH-5	2500 45/mL	Protocol	R1030221016	2-27-04	11		John
	95026-45-11	3-3-03	mom-mix-3	1000 us/al	Protocd	1011001017	2:27-04	11		VR
	95026-45-12	3-3-03	5242 - VCX	2000 yg/m2	Protocol	L102042305	2-27-04	11		8 X
	95026-45-13	3/17/03	502.7 (AL 2000M64	200049/mL	Restek	A025185	2/05	u	ľ	BAM
	95024-45-14	3/17/03	VOA CAL MIX #1	5000 29/mL	Restek	4025029	1/04	٠(BAM
	9502645-15	3/17/03	502.2 Cal MIX #1	2000 m/mL	Restek	A025310	7/09	U		BAM
	95026-45-16	3-25-03	5-2305	1000 ug/ash	Protocol	11020412005	3-24-04	11		901
(1)	95026-45-17	4-10-03	TCLP-500 (1)	1000 45/11	Utha Sei.	PZTIB	12-2009	11		J48/
(Z)	95026-45-18	4-14-03	EPA 624-Mix(A) 186	2000 uda	Supeko l	-B06520	9-2013	Ji		JL.
(2)	95026-45-19	4-14-03		200049/11	1		4-2004	11		32
(2)		4-14-03	5-930	1000 uglone	\sim ' \cdot 1	R1030319003	4-9-04	1([12
(2)	95026-45-21	4/11/03	/	200 Mac		4030401011		ir.	3	BAM
(12)	-45-22	4/17/03	9022-BH	2000 mg/ml	Protocy/	21030220008	4-10-04	b		ZAM
(iE	-45-23	4/17/03	8260-I	2000 19/mL	Protoci 1	21030220006	4-10-04	4 .		BAM
21)	-45.24	11 1 - 1	CLOV-SH	2500 gm	Protocol 1	2012/05	4-10-04	"		BAM

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STANDARD/QA SAMPLE PREPARATION LOGBOOK

ID Number	Date Prepared	Name of Standard	ID Number of Stock	Conc. of Stock	Exp. Date of Stock	
00067-32-01	2/14/07		> SPCtx-17	mulh'	4/2/03	200
. 1		NAME OF THE PARTY		2000 ms/m	4/2/03	4 - ACCUMPA
		M.	95026 - 44-15	(12/3/03	
			95026-44-11		20/4/03	
J	4	5022-BH	9506-44-19		12/3/13	
00067-32-02	2/15/03	SPLIX-17	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	meti	7/23/03	
1		X-SPL	95026-44-14	2000 00 /11	11 103	
			95026-45-01		1/24/24	
		MOM-MIX-3R	New 95026-45-52		1/24/04	
1	4	5022-BH	95026-44-21	4	my/04	
90067-32-03	2/18/03	Vinyl Acchite (5-3800)	95026-45-53	1000 m	2/23/3	
00067-32-04	424/03	SPL-8260-IS	95026-44-16	2500 mg/mc	12/3/28	
V/IS/55-Solat	ok)V	CLPV-SH-S	95026-44-20	2500 cg/nc	12/3/08	
00067-32-05	3/4/03	5-930/chloopine	95026-41-33	1000 ug/m	3/11/03	
00067-32-06	3/12/03	CLPV-MH (matri	95026-44-03	2000 mg/m	8/15/03	
00067-3207	3/17/03	Car give	95026-45-06	2500 mg/ml	7/27/04	今
V	V V	CLPV-SH-5	95076-45-10	7500 m/mL	3/5/03/2	7/04
00067-32-08	3/17/03	5242-VCX	95026-45-01	2000 mg/mL	1/24/04	
		MDM-MIX-3R	95026-45-02		1/24/04	
		SPL-5242R	95026-45-05		1/04/04	
		3022-BH	95026-44-21	\bigvee	1/24/04	
V	V	SPL-8240/X-17	95026-45-04	mixed	7/23/03	
00067-32-09	3/25/03	You Cal Mix#	95026-45-14	5000 mg/mL	1/06	
du 1			45026=45-13	2000 mg/mL		
ists V	V	502.2 Cal Mix 1		2000 09/m	4 7/09	
	Ban	4/7/03			1 00	124

STANDARD/QA SAMPLE PREPARATION LOGBOOK - continued

Vel or wt.	Final Volume	Final Conc.	Diluent	Diluent Source & lot #	Exp.	Storage Location	Date Discarded	Analyst Initials	
16.1	ZOL	100%	Meolt	028443	6/03	Vol Frazin	Diodelaca	JZz	1
104	1	1	1	1		1		1	1
									1
									1
	4		4	1		. \		4	1
1.6m	202	1000011	me OH	028443	C/03	Vol.		JUB	
1.0.1	221	1							
			1						
	<u></u>	1	4	4	4	4		20	
O. Monl	100mL	0,1 2/4	HzO	_	2/25/03	Oblateles		JUS	
5mL	250nL	50 ug/nL	MeOH	028443	8/03	VolStd	Freezey	BAN	ł
5mL	1	V ,	V	1	1	1		1	
ML	low	100 mg/mL	Meath	028443	3/11/03	Volstal A	3/12/03	BAM	
IML	ZOML	100 ug/al	Mex (+	027971	8/15/03		- '	BAM	
SAL	SOML	250 mg/ml	meo 1+	027971	9/17/03	Frz-16/		BAM	
SAL	SUML	1	1	V	1	1		V	
Iml	Zone	100 mg/mc	MeDH	02797/	7/23/03	Fre-Vol		BAM	
lal					1	1			-
IML								\sqcup	1
Iml									-
1.6ml	V	L	\downarrow	V	V Class	V		4	1
.4mL	20mL	- 100 m/nL	MOH	027971	98303	VOL GOZ	F	BM	-
ML	20ml	100 mg/mc	\ ,		7/23/03			1	1
Imi	20ml	1000/2	V	V	1	1		100:3	1
		BAMU	1103					0012	1

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STANDARD/QA SAMPLE PREPARATION LOGBOOK

ID	Date	Name of	ID Number	Conc.	Exp. Date of Stock
. Number	Prepared	Standard	of Stock	of Stock	7/23/13
00067-34-01	4/2/03	SPL-8260 1x-17	95026-45-04	multi	
		X-5PL-6242 R	95026-45-05	2000 Ju	1/24/34
		MOM-MIX-3	95026-45-11		2/24/04
		5242-UCX	95026-45-12		2/27/04
V	V	5072-BH	95076-45-08	\vee	2/27/04
00067-34-07	4/2/03	CLOV-NH(ms)	95026-44-03	2000 m	8 [15/09
00067-34-03	43/03	624 Cal MIXB	95026-44-04	2000 19/mL	10/03
V	1	624 GL MIN A	95026-44-07	2000 mg/mL	9/03
00067-34-04	4/7/03	TUP 500 Spike	95026-41-20	1000 mg/mL	12/04
00067-34-05	4/5/03	Surgate Std	95026-45-10	2500 MML	2/27/04
00067-34-06	4/8/03	Internals for "I" SPL-8260-DS	95026-45-06	2500 Mml	927/04
-34-07	4/8/03	CUV-SH-5	95026-45-10	2500 mg/L	427/04
00067-34-08	4/8/03	Internals for "X" SPL-8760-I5	95026-45-06	2500 W/L	2/27/04
00067-34-09	4/10/05	Surroyates for "I" CLPU-SH-5	95026-45-10	2500 51M	2/27/04
00767-34-10	4/11/3	CLPU-SH-5	95020-45-10	2500 74	2/22/04
00067-34-11	4/13/03	Surrosates for "x" CLPU-SH-5	95026-45-10	2500 1914	-2/27/04
00067-34-12	4/5/03	7670 for "x"	95024-45-06	2500 mg/mL	2/27/04
00067-34-13	4/23/63	Chloroprese Stal	95026-45-20	1000 m/n	4/1/04
0067-34-14	4/24/13	GZY CALMIXA	95026-45-19	200045/14	9.2003
7		" Mix b	95026-45-19	2000 00/1	
90067-34-15	4 30 33	SPL-82601X-17	95026-45-09	multi	8/24/03
[X-SPL-5242-R	95026_45-07	Zowski	2/27/04
		MDM-MIX-3	95026-45-11	1	2/22/04
		5242 -VCX	95026-45-12		427/04
1	7	5022-BH	95626-45-08	4	2/22/04
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STANDARD/QA SAMPLE PREPARATION LOGBOOK - continued

Vol or wt.	Final	Final	Diluent	Diluent	Exp.	Storage	Date	Analyst
of Stock	Volume	Conc.		Source & lot #	Date	Location	Discarded	Initials
1. bml .	Zonl	multo.	MeOH	028443	8/03	Vol.		JUB
1.0m	Zort	100001				.		
					ļ., ļ.,			
Ψ.	. 4	4	4	. 4 .	Ψ.	. 4		~
1.000	20ML	1000/2	MeOH	028443	8/03	Vol. Freezer		JCB
1.0mL	20ml	looughou	MeoH	028443.	9/03	Vol Std 1	rz .	134M
(-OnL	↓	V	1		1	1	-3.6	1
1.0 ml	lomL	100 ug/ml	Meg 14	028443.	1903	Volstal	TEP	BAM
· 4ml	10ml	100:4/mL	Meat	62.8443.	10/03	Voldfr.	z 1	Som
1.28mL	IOML	320°9hL	Medit	0.28443	1903	Vo 1 Frz		BAM
1.18ml	lone	295 mg/	MeOH	028443	10/03	16/92		BAM
1.01	1 Dul	2500/4		028443	10/03	Vollerz		JUB
2.36L	101	590 JUS 41	McOH	0.28443	10/03	VolFrz.		JUB.
2.01	10M	500 17/1	Me O H.	028443	(0/03	VOIFIZ		JEB
0.96 mL	ion	240 W/L	MeOH	028443	10/03	VolFrz		JCB
1,0 ml	lone	250 m/ac	Most	028443	19/03	Vo1 972		BAM
1.0 M	10M	1005/2	MOH	028443	10/03	WIFEZ		54
1. On	zen	10000	Me OH	028443	9/03	VolFuz	654	JEB
1.02ml	Zonl	1000m	Medit	4	9/03	· U		1
1.6 mL	20ml	multi	MedH	028443	8/03	WIFAZ		JUB
1.0	2.0mL	loonspec	NedH	028443	4/17	1		1
-	1	-		1	1			
	-	1	V	4	b	4		9
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STANDARD/QA SAMPLE PREPARATION LOGBOOK

100					
					-1
po-1-7	T	1.0-9h-72055	HB-720S	1	1
		h! 1 h . 12056	X71-2HZS		
to-1-9		50-91-97056	16- KIMI- MOW		
h0-1-01	Jul 2005	12026 M. 04	72 hzg-765-X		
50-75-11	Hnly	60-94-92056	LI-XIMES. US	E0-L-L	PO-45- FUDOS
ho o	700 m % SL	81-91-97093	Extra Cal Std	50-12-9	80-98-L900
00/11	74/50002	21-14-92056	PAS JOUDULA	20/02/0	10-18-1900C
20/1/9	7m/5,000Z	90-91-92056	CLPV-MH	50 53	90-78-L9000
ho/01/17	1	58-54-9E05b	49-2-05	1	1
ha/01/97		12-52-92056	XDN-Cheg		
no 01/2		20-9h-920Sb	AE-XIM-MOM		
40/01 H	2000 WILL	10-91-92056	X-5PL-5242 R		
50/22/4	etymou	60-9h-7295b	TI-XI0928-192	50/5/9	50-98-1900
hc/22/2	71/5 cesz	01-Sh-970Sb	S-45-1070	50 82 5	40-28-F3000
2/22/0	Tknonsz	70-5 N-22056	51-0928-785	2 28 03	E0-9E-L9000
48/20/8	7~15m0001	E0-91-92056	(748) Stbc-5	50 22 03	e0-98- L9000
h0/01/h	1	82-5h-9705b	H9-2705	1	1
40 01 D		12-24-92056	XDN-EPES		
40 (a) \$		20.91-920.96	WDW-WIX-3K		
ho 01 h	74/5,0007	10-11-92056	y thes-785-X		
8019218	;+1m	60-St-97056	LI- XIO728-785	2/8/03	10-98-6900
of Stock	of Stock	of Stock	Standard	Prepared	Number
Exp. Date	Conc.	19 Number	to ameV	Date	۵I

STANDARD/QA SAMPLE PREPARATION LOGBOOK - continued

Vol or wi	Final	Final	Diluent	Diluent	Exp.	Storage	Date	Analyst
M Stock	Volume	Conc.		Source & lot #	Date	Location	Discarded	Initials
LONL	20ml	multi	MeOH	028443	8/03	Vol. Freezer		JEB
HOLL		100 ms/ml	-		-			
					\vdash			
N.	1		1	4	1	1		1
DAL	10ml	1000g/ml	MeOH	028443	8/03	Val.	Perstone	JCB
251	10m	320 mg/m	MeOH	01089	9/03	Vol.	Drienda	JCB
118ml	conc	295 mg/u	MeOH	1	1	1	Survogates	JUB
.6 mL	20mL	multi	MeOH	C1089	10/23	Vol. Frz.	Calib.	5 CB
Low		100 mg/mL			1			
A								
V	.4	4			10			
OML	ZOM	100 49/2		7	10/03	1	465	1
LONL	ZOML	100 45/11	MUTOH	1089	11/00	Vol.		JL
MINL	lone	100,000,001	MLOH	1	11/03	4		JUB
UML	20 mL	mulf,	MEDH	C1089	11/03	rol. Fiz		JL
10 mL	Li.	100 us/me				1		1
	1	1	4	4		1		4
								001

ORGANICS RUN LOGS

VOLATILE - TCLP

BATCH: \\LAFTGT1\ee\chem\X.i\X030515.b

Data File	Injection Date	Sample Type	Dil Factor Inst ID	Method	Method Batch	
X135BF1.D	15-MAY-2003 15:50	BFB	1.00 X	xbfb.m	x030515.b	į.
X135IC1.D	15-MAY-2003 16:14	Cal Level 1	1.00 X	X8260w.m	X030515.b	1
X135IC2.D	15-MAY-2003 16:37	Cal Level 2	1.00 X	X8260w.m	x030515.b	- 1
X135IC3.D	15-MAY-2003 17:00	Cal Level 3	1.00 X	X8260w.m	x030515.b	1
X135IC4.D	15-MAY-2003 17:23	Cal Level 4	1.00 X	X8260w.m	X030515.b	10
X135IC5.D	15-MAY-2003 17:46	Cal Level 5	1.00 X	X8260w.m	x030515.b	ĺ.
X135IC6.D	15-MAY-2003 18:10	Cal Level 6	1.00 X	X8260w.m	X030515.b	- 6
X135IC7.D	15-MAY-2003 18:33	Cal Level 7	1.00 X	X8260w.m	X030515.b	Ě
X135IC8.D	15-MAY-2003 18:56	Cal Level 8	1.00 X	X8260w.m	X030515.b	i i
X135IC9.D	15-MAY-2003 19:19	Cal Level 9	1.00 X	X8260w.m	X030515.b	
X135ICV.D	15-MAY-2003 19:42	LCS	1.00 X	X8260w.m	X030515.b	
X135TL1.D	15-MAY-2003 20:06	LCS	10.00 X	X8260w.m	X030515.b	
X135TD1.D	15-MAY-2003 20:29	LCSD	10.00 X	X8260w.m	X030515.b	Ĺ
X135B01.D	15-MAY-2003 21:50	BLANK	1.00 X	X8260w.m	X030515.b	

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
X135BF1.D	LIQUID	VOA	TUNE BFB	00067-32-07 IS/SS		
X135IC1.D	LIQUID	VOA	ICAL ICAL-1	00067-36-01 CAL STD	Ĭ.	1
X1351C2.D	LIQUID	VOA	ICAL ICAL-2	1	1	1
X135IC3.D	LIQUID	VOA	ICAL ICAL-5	ï		T T
X135IC4.D	LIQUID	VOA	ICAL ICAL-10	Ĩ.	ĵ	1
X135IC5.D	LIQUID	VOA	ICAL ICAL-20	Ē		1
X135IC6.D	LIQUID	VOA	ICAL ICAL-50	Ï	ľ	1
X135IC7.D	LIQUID	VOA	ICAL ICAL-100	Ĵ.	Î	Î.
X135IC8.D	LIQUID	VOA	ICAL ICAL-150	1	l)	1 1
X135IC9.D	LIQUID	VOA	ICAL ICAL-200	Ï.	1	1
X135ICV.D	LIQUID	VOA	ICV ICV-100	00067-34-14 ICV STD	Î	Î Î
X135TL1.D	LIQUID	VOA	LCS LCS	00067-34-04 LCS STD		- Ď
X135TD1.D	LIQUID	VOA	LCSD LCSD	The second secon	Î	Ĭ.
X135B01.D	LIQUID	VOA	MBLK MBLK	1	Ī	1

		+	-+			
X135BF1.D	all.sub	1	5018770	5018771	1117285	1224808
X135IC1.D	tclp.sub	8260wlcs.spk	5018783	5018771	5018772	1197311
X135IC2.D	tclp.sub	8260wlcs.spk	5018784	5018771	5018772	1197311
X135IC3.D	tclp.sub	8260wlcs.spk	5018785	5018771	5018772	1197311
X135IC4.D	tclp.sub	8260wlcs.spk	5018786	5018771	5018772	1197311
X135IC5.D	tclp.sub	8260wlcs.spk	5018787	5018771	5018772	1197311
X135IC6.D	tclp.sub	8260wlcs.spk	5018788	5018771	5018772	1197311
X135IC7.D	tclp.sub	8260wlcs.spk	5018774	5018771	5018772	1197311
X135IC8.D	tclp.sub	8260wlcs.spk	5018789	5018771	5018772	1197311
X135IC9.D	tclp.sub	8260wlcs.spk	5018790	5018771	5018772	1197311
X135ICV.D	tclp.sub	624.spk	5018868	5018771	5018772	1197311
X135TL1.D	tclp.sub	tclpv.spk	5018873	5018771	5018772	1197311
X135TD1.D	tclp.sub	tclpv.spk	5018872	5018771	5018772	1197311
X135B01.D	allmost.sub	8260wlcs.spk	5018866	5018771	5018772	1197311

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BATCH: \\LAFTGT1\ee\chem\X.i\X030515.b

Data File	Injection Date	Sample Type	Dil Factor Inst ID	Method	Method Batch	
X135S01.D	15-MAY-2003 22:13	BLANK	10.00 X	X8260w.m	X030515.b	1
X135K01.D	15-MAY-2003 22:36	Unknown	10.00 X	X8260w.m	X030515.b	1
X135KD1.D	15-MAY-2003 22:59	MS	10.00 X	X8260w.m	X030515.b	1
X135B02.D	15-MAY-2003 23:23	BLANK	10.00 X	X8260w.m	x030515.b	-
*				+		+

Data File M	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
X135S01.D L	JIQUID	VOA	SAMP 03050447-01A	X10		i i
X135K01.D L	IQUID	VOA	MS 03050447-01AMS	X10	Ĺ	Î.
X135KD1.D L	JIQUID	VOA	MSD 03050447-01AMS	00067-34-04 MS/MSD	É	į į
X135B02.D I	LIQUID	VOA	LBLK LBLK	X10	P.	1

Data File	Compound Sublist	Spike List File	Sample Ref # QC	Group Ref # Ini	t Cal Ref # Bat	ch Ref #
X135S01.D	tclp.sub	8260wlcs.spk	5605030	5018771	5018772	1197311
X135K01.D	tclp.sub	8260wlcs.spk	5605024	5018771	5018772	1197311
X135KD1.D	tclp.sub	tclpv.spk	5605022	5018771	5018772	1197311
X135B02.D	tclp.sub	8260wlcs.spk	5605032	5018771	5018772	1197311
			+			

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BATCH: \\LAFTGT1\ee\chem\X.i\X030520.b

Data File	Injection Date	Sample Type	Dil Factor Inst ID	Method	Method Batch	
*		-+	-+			+
X140BF1.D	20-MAY-2003 11:51	BFB	1.00 X	xbfb.m	X030520.b	1
X140CC1.D	20-MAY-2003 12:15	Continuing Cal	1.00 X	X8260w.m	X030520.b	
X140TL1.D	20-MAY-2003 13:01	LCS	10.00 X	X8260w.m	X030520.b	- 10
X140B01.D	20-MAY-2003 13:48	BLANK	1.00 X	X8260w.m	X030520.b	
X140B02.D	20-MAY-2003 14:11	BLANK	10.00 X	X8260w.m	x030520.b	Ĭ.
X140B03.D	20-MAY-2003 14:34	BLANK	10.00 X	X8260w.m	X030520.b	Ü
X140K01.D	20-MAY-2003 15:20	MS	10.00 X	X8260w.m	X030520.b	1
X140S02.D	20-MAY-2003 15:43	Unknown	10.00 X	X8260w.m	X030520.b	1
X140S03.D	20-MAY-2003 16:07	Unknown	10.00 X	X8260w.m	x030520.b	
X140KD1.D	20-MAY-2003 16:30	MSD	10.00 X	X8260w.m	X030520.b	1
X140S04.D	20-MAY-2003 16:53	Unknown	10000.00 X	X8260w.m	X030520.b	i i
X140S05.D	20-MAY-2003 17:16	Unknown	10.00 X	X8260w.m	X030520.b	Î.
X140TL2.D	20-MAY-2003 17:39	LCS	1.00 X	X8260w.m	x030520.b	i i
X140TD2.D	20-MAY-2003 18:03	LCSD	1.00 X	X8260w.m	X030520.b	i

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
X140BF1.D	LIQUID	voa	TUNE BFB	00067-32-07 IS/SS	I	*
X140CC1.D	LIQUID	VOA	CCV CCV-100	1	1	1
X140TL1.D	LIQUID	VOA	LCS LCS X10	1		l .
X140B01.D	LIQUID	VOA	MBLK MBLK	Ĩ	1	1
X140B02.D	LIQUID	VOA	LBLK LBLK X10	1		
X140B03.D	LIQUID	VOA	LBLK LBLK X10	Î		l
X140K01.D	LIQUID	VOA	MS 03050225-15DMS	X10	Ŷ.	Ť
X140S02.D	LIQUID	VOA	SAMP 03050812-01A X	10	Ï	Ê
X140S03.D	LIQUID	VOA	SAMP 03050225-15D X	10	Î	E
X140KD1.D	LIQUID	VOA	MSD 03050225-15DMSD	X10	Î	Ê
X140S04.D	LIQUID	VOA	SAMP 03050225-15D-0	L X10000	Ì	Î
X140S05.D	LIQUID	VOA	SAMP 03050808-01A X	10	1	1
X140TL2.D	LIQUID	VOA	LCS LCS	1		Ê
X140TD2.D	LIQUID	VOA	LCSD LCSD	Ť	1	

Data File	Compound Sublist	Spike List File	Sample Ref # QC	Group Ref # Ini	t Cal Ref # Bat	ch Ref #
X140BF1.D	all.sub	1	5606873	5606878	1117285	1224808
X140CC1.D	tclp.sub	8260wlcs.spk	5606877	5606878	5018772	1197311
X140TL1.D	tclp.sub	tclpv.spk	5606915	5606878	5018772	1197311
X140B01.D	tclp.sub	8260wlcs.spk	5606911	5606878	5018772	1197311
X140B02.D	tclp.sub	8260wlcs.spk	5606912	5606878	5018772	1197311
X140B03.D	tclp.sub	8260wlcs.spk	5606913	5606878	5018772	1197311
X140K01.D	tclp.sub	tclpv.spk	5607135	5606878	5018772	1197311
X140S02.D	tclp.sub	8260wlcs.spk	5606953	5606878	5018772	1197311
X140S03.D	tclp.sub	8260wlcs.spk	5607137	5606878	5018772	1197311
X140KD1.D	tclp.sub	tclpv.spk	5607136	5606878	5018772	1197311
X140S04.D	tclp.sub	8260wlcs.spk	5607138	5606878	5018772	1197311
X140S05.D	tclp.sub	8260wlcs.spk	5607139	5606878	5018772	1197311
X140TL2.D	allmost.sub	8260wlcs.spk	5607146	5606878	5018772	1197311
X140TD2.D	allmost.sub	8260wlcs.spk	5607145	5606878	5018772	1197311

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BATCH: \\LAFTGT1\ee\chem\X.i\X030520.b

Data File	Injection Date	Sample Type	Dil Factor Inst ID	Method	Method Batch	
X140S06.D	20-MAY-2003 18:26	Unknown	1.00 X	X8260w.m	X030520.b	Ī
X140S07,D	20-MAY-2003 18:49	Unknown	1.00 X	X8260w.m	X030520.b	į.
X140S08.D	20-MAY-2003 19:12	Unknown	1.00 X	X8260w.m	x030520.b	Ü
X140S09.D	20-MAY-2003 19:35	Unknown	1.00 X	X8260w.m	x030520.b	10
X140S10.D	20-MAY-2003 19:58	Unknown	1.00 X	X8260w.m	x030520.b	Û
X140S11.D	20-MAY-2003 20:22	Unknown	100.00 X	X8260w.m	x030520.b	Ü
X140S12.D	20-MAY-2003 20:45	Unknown	10.00 X	X8260w.m	x030520.b	l.
X140S13.D	20-MAY-2003 21:08	Unknown	1.00 X	X8260w.m	X030520.b	l li
X140S14.D	20-MAY-2003 21:31	Unknown	5.00 X	X8260w.m	x030520.b	Ü
X140S15.D	20-MAY-2003 21:54	Unknown	50.00 X	X8260w.m	x030520.b	į.
X140K02.D	20-MAY-2003 22:17	MS	50.00 X	X8260w.m	X030520.b	F
X140KD2.D	20-MAY-2003 22:40	MS	50.00 X	X8260w.m	X030520.b	Ê
X140S16.D	20-MAY-2003 23:04	Unknown	100.00 X	X8260w.m	X030520.b	ĺ.
X140S17.D	20-MAY-2003 23:27	Unknown	50.00 X	X8260w.m	X030520.b	ĺ.

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
X140S06.D	LIQUID	VOA	SAMP 03050581-01A	*		
X140S07.D	LIQUID	VOA	SAMP 03050581-02A	1	1	T I
X140S08.D	LIQUID	VOA	SAMP 03050581-03A	1	ĺ.	Î.
X140S09.D	LIQUID	VOA	SAMP 03050581-04A	1	į.	1
X140S10.D	LIQUID	VOA	SAMP 03050581-06A	į.	Ĭ.	Ĭ.
X140S11.D	LIQUID	VOA	SAMP 03050651-04A	ĺ.	Ĩ	F
X140S12.D	LIQUID	VOA	SAMP 03050651-05A	T	Ĺ	t t
X140S13.D	LIQUID	VOA	SAMP 03050651-06A	Ĩ	Ï	1
X140S14.D	LIQUID	VOA	SAMP 03050651-07A	1	1	1
X140S15.D	LIQUID	VOA	SAMP 03050651-10A	1	1	1
X140K02.D	LIQUID	VOA	MS 03050651-10AMS	Î	Î	T I
X140KD2.D	LIQUID	VOA	MSD 03050651-10AMSD	1	1	Ĭ Î
X140S16.D	LIQUID	VOA	SAMP 03050651-13A	1	ĺ.	Î.
X140S17.D	LIQUID	VOA	SAMP 03050651-14A	ĺ	1	I I

Data File	Compound Sublist	Spike List File	Sample Ref # QC	Group Ref # Ini	t Cal Ref # Bat	ch Ref #
X140S06.D	BTXM.sub	8260wlcs.spk	5607140	5606878	5018772	1197311
X140S07.D	BTXM. sub	8260wlcs.spk	5607141	5606878	5018772	1197311
X140S08.D	BTXM. sub	8260wlcs.spk	5607142	5606878	5018772	1197311
X140S09.D	BTXM.sub	8260wlcs.spk	5607143	5606878	5018772	1197311
X140S10.D	BTXM.sub	8260wlcs.spk	5607144	5606878	5018772	1197311
X140S11.D	BTXM+N.sub	8260wlcs.spk	5607223	5606878	5018772	1197311
X140S12.D	BTXM+N.sub	8260wlcs.spk	5607192	5606878	5018772	1197311
X140S13.D	BTXM+N.sub	8260wlcs.spk	5607193	5606878	5018772	1197311
X140S14.D	BTXM+N.sub	8260wlcs.spk	5607194	5606878	5018772	1197311
X140S15.D	BTXM+N.sub	8260wlcs.spk	5607195	5606878	5018772	1197311
X140K02.D	TCLM. sub	8260wms.spk	5607190	5606878	5018772	1197311
X140KD2.D	TCLM. sub	8260wms.spk	5607191	5606878	5018772	1197311
X140S16.D	BTXM+N.sub	8260wlcs.spk	5607196	5606878	5018772	1197311
X140S17.D	BTXM+N.sub	8260wlcs.spk	5607197	5606878	5018772	1197311

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BATCH: \\LAFTGT1\ee\chem\X.i\X030520.b

Data File	Injection Date	Sample Type	Dil Factor Inst ID	Method	Method Batch	
X140S18.D	20-MAY-2003 23:50	Unknown	50.00 X	X8260w.m	X030520.b	
Data File	Matrix Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group	p
X140S18.D	LIQUID VOA	SAMP 03050651-16A				 +
Data File	Compound Sublist	Spike List File	Sample Ref # QC	Group Ref # Init Cal	Ref # Batch Ref #	
X140S18.D	BTXM+N.sub	8260wlcs.spk	5607198	5606878 5	018772 1197311	1
+		+				+

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ORGANICS CLP-LIKE FORM 1'S & RAW DATA SEMIVOLATILE - TCLP

CLIENT SAMPLE ID

16-E-1003-T1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

SOIL

100.0

(g/mL)

G

SDG No.:

Lab Sample ID:

03050225-15D

03050225

Lab File ID:

A140S01.D

Sample wt/vol:

LOW

.

Date Collected:

5/3/03

% Moisture:

GC Column:

ID:

(mm)

Date Extracted:

Date Analyzed:

5/20/03

5/16/03

Extract Volume:

1000

(ul)

Dilution Factor:

1.0

CONCENTRATION UNITS:

mg/L

CAS NO.	COMPOUND	(mg/L or ug/Kg)	mg/L	C
106-46-7	1,4-Dichlorobenzene		0.05	U
95-95-4	2,4,5-Trichlorophenol		0.05	U
88-06-2	2,4,6-Trichlorophenol		0.05	U
121-14-2	2,4-Dinitrotoluene		0.05	U
118-74-1	Hexachlorobenzene		0.05	U
87-68-3	Hexachlorobutadiene		0.05	U
67-72-1	Hexachloroethane		0.05	U
65794-96-9	m,p-Cresols		0.039	J
98-95-3	Nitrobenzene		0.05	U
95-48-7	o-Cresol		0.057	
87-86-5	Pentachlorophenol		0.2	U
110-86-1	Pyridine		0.05	U

CLIENT SAMPLE ID

						16-E-1003-T	1-AMS	
Lab Name:	SPL, Inc.							
Lab Code:	SPLLAF				SDG No.:		0	3050225
Matrix:	SOIL				Lab Sample ID:		0305022	5-15DMS
Sample wt/vol:	100.0	(g/mL)	G		Lab File ID:		<u>A1</u>	40K01.D
Level:	LOW				Date Collected:			5/3/03
% Moisture:					Date Extracted:			5/16/03
GC Column:		1	D:	(mm)	Date Analyzed:			5/20/03
Extract Volume:	1000	(ul)			Dilution Factor:			1.0
					CONCENTRATION UNITS:		mg/L	
CAS	NO.	(COMPOUN	ND	(mg/L or ug/Kg)	mg/L	Q	

CAS NO.	COMPOUND	(mg/L or ug/Kg)	mg/L	Q
106-46-7	1,4-Dichlorobenzene		0.085	
95-95-4	2,4,5-Trichlorophenol		0.76	
88-06-2	2,4,6-Trichlorophenol		0.66	
121-14-2	2,4-Dinitrotoluene		0.085	
118-74-1	Hexachlorobenzene		0.071	
87-68-3	Hexachlorobutadiene		0.072	
67-72-1	Hexachloroethane		0.084	
65794-96-9	m,p-Cresols		1.2	
98-95-3	Nitrobenzene		0.090	
95-48-7	o-Cresol		0.61	
87-86-5	Pentachlorophenol		0.77	
110-86-1	Pyridine		0.084	

CLIENT SAMPLE ID

16-E-1003-T1-AMSD Lab Name: SPL, Inc. Lab Code: SDG No.: SPLLAF 03050225 Lab Sample ID: SOIL 03050225-15DMSD Matrix: Lab File ID: Sample wt/vol: 100.0 (g/mL) G A140KD1.D Date Collected: 5/3/03 Level: LOW Date Extracted: 5/16/03 % Moisture: Date Analyzed: 5/20/03 GC Column: ID: (mm) Dilution Factor: 1.0 Extract Volume: 1000 (ul)

| CAS NO. | COMPOUND | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound | Compound |

CAS NO.	COMPOUND	(mg/L or ug/Kg)	mg/L	Q
106-46-7	1,4-Dichlorobenzene		0.091	
95-95-4	2,4,5-Trichlorophenol		0.72	
88-06-2	2,4,6-Trichlorophenol		0.66	
121-14-2	2,4-Dinitrotoluene		0.083	
118-74-1	Hexachlorobenzene		0.073	
87-68-3	Hexachlorobutadiene		0.081	
67-72-1	Hexachloroethane		0.093	
65794-96-9	m,p-Cresols		1.2	
98-95-3	Nitrobenzene		0.090	
95-48-7	o-Cresol		0.65	
87-86-5	Pentachlorophenol		0.76	
110-86-1	Pyridine		0.072	

MB-16618

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Sample wt/vol:

LEACHATE

(g/mL)

ML

SDG No.:

Lab File ID:

Lab Sample ID:

Date Collected:

Date Extracted:

A140B01.D

03050225

MB-16618

5/16/03

5/20/03

Level:

Matrix:

LOW

100.0

% Moisture:

GC Column:

Extract Volume:

1000

(ul)

ID: (mm) Date Analyzed:

Dilution Factor:

1.0

CONCENTRATION UNITS:

mg/L

CAS NO.	COMPOUND	(mg/L or ug/Kg)	mg/L	Q
106-46-7	1,4-Dichlorobenzene		0.05	U
95-95-4	2,4,5-Trichlorophenol		0.05	U
88-06-2	2,4,6-Trichlorophenol		0.05	U
121-14-2	2,4-Dinitrotoluene		0.05	U
118-74-1	Hexachlorobenzene		0.05	U
87-68-3	Hexachlorobutadiene		0.05	U
67-72-1	Hexachloroethane		0.05	U
65794-96-9	m,p-Cresols		0.05	U
98-95-3	Nitrobenzene		0.05	U
95-48-7	o-Cresol		0.05	U
87-86-5	Pentachlorophenol		0.2	U
110-86-1	Pyridine		0.05	U

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140S01.D

Report Date: 21-May-2003 08:54

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i

Lab File ID: A140S01.D

Calibration Date: 20-MAY-2003 Calibration Time: 11:58

Lab Smp Id: SAMP 03050225-15D Analysis Type: SV

Level: LOW

Quant Type: ISTD

Sample Type: WATER

Operator: 1mk
Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m
Misc Info: 8270_TCLP

		AREA	LIMIT		Section Section 1
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	=======	======
23 1,4-Dichlorobenze	90983	45492	181966	77662	-14.64
54 Naphthalene-d8	381902	190951	763804	318194	-16.68
86 Acenaphthene-d10	240535	120268	481070	186054	-22.65
20 Phenanthrene-d10	463864	231932	927728	376095	-18.92
47 Chrysene-d12	546944	273472	1093888	438243	-19.87
157 Perylene-d12	392379	196190	784758	57103	-85.45

		RT I	LIMIT		987 ST ST ST ST ST
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	=======	======
23 1,4-Dichlorobenze	7.78	7.28	8.28	7.79	0.10
54 Naphthalene-d8	9.98	9.48	10.48	9.98	-0.04
86 Acenaphthene-d10	13.07	12.57	13.57	13.07	-0.03
120 Phenanthrene-d10	15.63	15.13	16.13	15.62	-0.02
147 Chrysene-d12	22.13	21.63	22.63	22.13	-0.02
157 Perylene-d12	28.03	27.53	28.53	28.03	-0.01

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area. RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

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Report Date: 07-Jul-2003 09:28

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i

Calibration Date: 20-MAY-2003

Level: LOW

Calibration Time: 11:09

Page 3

Lab File ID: A140S01.D Lab Smp Id: SAMP 03050225-15D

Analysis Type: SV

Quant Type: ISTD

Sample Type: WATER

Operator: lmk

Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

Misc Info: 8270 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	=======	=======	======
23 1,4-Dichlorobenze	105197	52599	210394	77662	-26.17
54 Naphthalene-d8	437603	218802	875206	318194	-27.29
86 Acenaphthene-d10	273232	136616	546464	186054	-31.91
120 Phenanthrene-d10	544898	272449	1089796	376095	-30.98
147 Chrysene-d12	609065	304533	1218130	438243	-28.05
157 Perylene-d12	446539	223270	893078	57103	-87.21

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	=======	======
23 1,4-Dichlorobenze	7.79	7.29	8.29	7.79	-0.01
54 Naphthalene-d8	9.99	9.49	10.49	9.98	-0.12
86 Acenaphthene-d10	13.08	12.58	13.58	13.07	-0.09
120 Phenanthrene-d10	15.64	15.14	16.14	15.62	-0.08
147 Chrysene-d12	22.15	21.65	22.65	22.13	-0.11
157 Perylene-d12	28.04	27.54	28.54	28.03	-0.04

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area. RT UPPER LIMIT = +0.50 minutes of internal standard RT. RT LOWER LIMIT = -0.50 minutes of internal standard RT.

hast Is forled low but is NOT used for quantitation of any of the Texp target analytes. JK 7/7

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140S01.D

Report Date: 21-May-2003 08:54

RECOVERY REPORT

Client SDG: Client Name: Fraction: SV Sample Matrix: LIQUID

Lab Smp Id: SAMP 03050225-15D

Operator: 1mk

Level: LOW
Data Type: MS DATA
SpikeList File: tclps.spk SampleType: SAMPLE Quant Type: ISTD

Sublist File: tclp.sub
Method File: \LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

Misc Info: 8270 TCLP

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 2-Fluorophenol	750.000	418.768	55.84	21-110
\$ 15 Phenol-d5	750.000	383.445	51.13	10-110
\$ 20 2-Chlorophenol-d4	750.000	496.684	66.22	33-110
\$ 26 1,2-Dichlorobenzen	500.000	366.920	73.38	16-110
\$ 39 Nitrobenzene-d5	500.000	329.388	65.88	35-114
\$ 72 2-Fluorobiphenyl	500.000	336.892	67.38	43-116
\$ 107 2,4,6-Tribromophen	750.000	524.204	69.89	10-123
\$ 136 4-Terphenyl-d14	500.000	262.278	52.46	33-141

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140K01.D

Report Date: 07-Jul-2003 09:03

SPL

INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i

Lab File ID: A140K01.D

Calibration Time: 11:09

Calibration Date: 20-MAY-2003

Lab Smp Id: MS 03050225-15DMS

Analysis Type: SV

Level: LOW

Quant Type: ISTD

Sample Type: WATER

Operator: 1mk
Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m
Misc Info: 8270_TCLP

		AREA	LIMIT	Proposition and the second	Managaran and a second
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	=======	======
23 1,4-Dichlorobenze	105197	52599	210394	74252	-29.42
54 Naphthalene-d8	437603	218802	875206	302359	-30.91
86 Acenaphthene-d10	273232	136616	546464	182331	-33.27
120 Phenanthrene-d10	544898	272449	1089796	361484	-33.66
147 Chrysene-d12	609065	304533	1218130	425840	-30.08
157 Perylene-d12	446539	223270	893078	209176	-53.16

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COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
23 1,4-Dichlorobenze	7.79	7.29	8.29	7.79	-0.00
54 Naphthalene-d8	9.99	9.49	10.49	9.98	-0.12
86 Acenaphthene-d10	13.08	12.58	13.58	13.07	-0.09
120 Phenanthrene-d10	15.64	15.14	16.14	15.62	-0.07
147 Chrysene-d12	22.15	21.65	22.65	22.13	-0.10
157 Perylene-d12	28.04	27.54	28.54	28.02	-0.08

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area. RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Last IS failed low but is not used in the quantitation of any target TCLP compounds. IX 7/7

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140K01.D

Report Date: 07-Jul-2003 09:03

#### SPL

#### RECOVERY REPORT

Client Name: Sample Matrix: LIQUID Client SDG:

Fraction: SV

Lab Smp Id: MS 03050225-15DMS

Operator: lmk SampleType: MS Quant Type: ISTD

Level: LOW Data Type: MS DATA

SpikeList File: tclps.spk Quant Type: Ms
Sublist File: tclp.sub
Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m
Misc Info: 8270_TCLP

	CONC	CONC	ક	V1
SPIKE COMPOUND	ADDED	RECOVERED	RECOVERED	LIMITS
	ug/L	ug/L		
28 2-Methylphenol	800.000	605.460	75.68	31-110
32 m,p-Cresols	1600.00	1179.48	73.72	27-112
228 3- & 4-Methylpheno	1600.00	1179.48	73.72	27-112
92 2,4-Dinitrotoluene	130.000	85.2452	65.57	39-139
115 Hexachlorobenzene	130.000	71.2553	54.81	5-152
59 Hexachlorobutadien	130.000	71.8572	55.27	24-116
38 Hexachloroethane	130.000	83.4751	64.21	32-113
40 Nitrobenzene	130.000	90.0378	69.26	35-180
117 Pentachlorophenol	800.000	771.814	96.48	14-176
2 Pyridine	130.000	83.6355	64.33	0-141
71 2,4,5-Trichlorophe	800.000	763.728	95.47	43-117
70 2,4,6-Trichlorophe	800.000	661.326	82.67	14-176
24 1,4-Dichlorobenzen	130.000	84.7578	65.20	20-124

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 2-Fluorophenol \$ 15 Phenol-d5 \$ 20 2-Chlorophenol-d4 \$ 26 1,2-Dichlorobenzen \$ 39 Nitrobenzene-d5 \$ 72 2-Fluorobiphenyl \$ 107 2,4,6-Tribromophen	750.000 750.000 750.000 500.000 500.000 500.000 750.000	481.198 470.858 564.321 308.589 285.346 289.475 689.886	64.16 62.78 75.24 61.72 57.07 57.90 91.98	21-110 10-110 33-110 16-110 35-114 43-116 10-123
\$ 136 4-Terphenyl-d14	500.000	257.941	51.59	33-141

Report Date: 07-Jul-2003 09:03

#### SPL

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i Calibration Date: 20-MAY-2003

Lab File ID: A140KD1.D Calibration Time: 11:09

Lab Smp Id: MSD 03050225-15DMSD

Analysis Type: SV Level: LOW

Quant Type: ISTD Sample Type: WATER

Operator: lmk

Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

Misc Info: 8270 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
23 1,4-Dichlorobenze	105197	52599	210394	77427	-26.40
54 Naphthalene-d8	437603	218802	875206	308512	-29.50
86 Acenaphthene-d10	273232	136616	546464	186096	-31.89
120 Phenanthrene-d10	544898	272449	1089796	363460	-33.30
147 Chrysene-d12	609065	304533	1218130	441537	-27.51
157 Perylene-d12	446539	223270	893078	322719	-27.73

59000000000000000000000000000000000000		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	
23 1,4-Dichlorobenze	7.79	7.29	8.29	7.79	-0.01
54 Naphthalene-d8	9.99	9.49	10.49	9.98	-0.12
86 Acenaphthene-d10	13.08	12.58	13.58	13.07	-0.09
120 Phenanthrene-d10	15.64	15.14	16.14	15.62	-0.08
147 Chrysene-d12	22.15	21.65	22.65	22.13	-0.10
157 Perylene-d12	28.04	27.54	28.54	28.03	-0.04

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Page 3

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140KD1.D

Report Date: 07-Jul-2003 09:04

#### SPL

#### RECOVERY REPORT

Client Name:

Client SDG: Fraction: SV

Sample Matrix: LIQUID

Lab Smp Id: MSD 03050225-15DMSD

SampleType: MSD

Level: LOW

Data Type: MS DATA

SpikeList File: tclps.spk

Sublist File: tclp.sub

Method File: \LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

Quant Type: ISTD

Misc Info: 8270 TCLP

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
28 2-Methylphenol 32 m,p-Cresols	800.000	649.800 1234.66	81.22 77.17	31-110 27-112
228 3- & 4-Methylpheno	1600.00	1234.66	77.17	27-112
92 2,4-Dinitrotoluene 115 Hexachlorobenzene	130.000 130.000	82.8752 73.1663	63.75 56.28	39-139 5-152
59 Hexachlorobutadien	130.000	81.0962	62.38	24-116
38 Hexachloroethane	130.000	92.2360 90.4794	70.95 69.60	32-113 35-180
40 Nitrobenzene 117 Pentachlorophenol	130.000	755.138	94.39	14-176
2 Pyridine	130.000	72.0848	55.45	0-141
71 2,4,5-Trichlorophe 70 2,4,6-Trichlorophe	800.000	719.885 656.565	89.99 82.07	43-117
24 1,4-Dichlorobenzen	130.000	90.6302	69.72	20-124
				l

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 2-Fluorophenol \$ 15 Phenol-d5 \$ 20 2-Chlorophenol-d4 \$ 26 1,2-Dichlorobenzen \$ 39 Nitrobenzene-d5 \$ 72 2-Fluorobiphenyl \$ 107 2,4,6-Tribromophen \$ 136 4-Terphenyl-d14	750.000 750.000 750.000 500.000 500.000 750.000 500.000	511.983 499.025 597.031 324.336 292.114 305.108 652.964 276.829	68.26 66.54 79.60 64.87 58.42 61.02 87.06 55.37	21-110 10-110 33-110 16-110 35-114 43-116 10-123 33-141

Page 3 Data File: \LAFTGT1\ee\chem\A.i\A030520.b\A140B01.D

Report Date: 07-Jul-2003 09:25

#### SPL

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Level: LOW

Calibration Date: 20-MAY-2003 Instrument ID: A.i

Calibration Time: 11:09 Lab File ID: A140B01.D

Lab Smp Id: MBLK MB-16618

Analysis Type: SV

Quant Type: ISTD Sample Type: WATER

Operator: 1mk
Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m
Misc Info: 8270_TCLP

		AREA	LIMIT		-
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========		
23 1,4-Dichlorobenze	105197	52599	210394	75740	-28.00
54 Naphthalene-d8	437603	218802	875206	292302	-33.20
86 Acenaphthene-d10	273232	136616	546464	177327	-35.10
120 Phenanthrene-d10	544898	272449	1089796	348116	-36.11
147 Chrysene-d12	609065	304533	1218130	421857	-30.74
157 Pervlene-d12	446539	223270	893078	318268	-28.73
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		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	=======	======
23 1,4-Dichlorobenze	7.79	7.29	8.29	7.79	-0.01
54 Naphthalene-d8	9.99	9.49	10.49	9.98	-0.12
86 Acenaphthene-d10	13.08	12.58	13.58	13.07	-0.09
120 Phenanthrene-d10	15.64	15.14	16.14	15.62	-0.08
147 Chrysene-d12	22.15	21.65	22.65	22.13	-0.11
157 Pervlene-d12	28.04	27.54	28.54	28.03	-0.04

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 07-Jul-2003 09:25

SPL

#### RECOVERY REPORT

Client SDG: Client Name: Fraction: SV Sample Matrix: LIQUID

Lab Smp Id: MBLK MB-16618

Level: LOW

Data Type: MS DATA

SpikeList File: tclps.spk

Sublist File: tclp.sub

Method File: \LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m SampleType: SAMPLE Quant Type: ISTD

Misc Info: 8270 TCLP

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 2-Fluorophenol \$ 15 Phenol-d5 \$ 20 2-Chlorophenol-d4 \$ 26 1,2-Dichlorobenzen \$ 39 Nitrobenzene-d5 \$ 72 2-Fluorobiphenyl \$ 107 2,4,6-Tribromophen \$ 136 4-Terphenyl-d14	750.000 750.000 750.000 500.000 500.000 750.000	335.200 322.985 383.005 284.515 268.174 290.339 491.186 382.274	44.69 43.06 51.07 56.90 53.63 58.07 65.49 76.45	21-110 10-110 33-110 16-110 35-114 43-116 10-123 33-141

#### 2D Surrogate Recovery - Sample Data TCLP Semivolatile Organics

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LEVEL:

LOW

Level:(low/med)

LOW

EPA SAMPLE NO.	S1 (2CP) #	S2 (2FP) #	S3 (DCB) #	S4 (FBP) #	S5 (NBZ) #	S6 (PHL) #	S7 (TBP) #	S8 (TPH)	# OUT
01 16-E-1003-T1-A	66	56	73	67	66	51	70	52	0
02 16-E-1003-T1-AMS	75	64	62	58	57	63	92	52	0
03 16-E-1003-T1-AMSD	80	68	65	61	58	67	87	55	0

			QC Limits				
S 1	(2CP)	=	2-Chlorophenol-d4	33-110	%		
S 2	(2FP)	=	2-Fluorophenol	21-110	%		
S 3	(DCB)	=	1,2-Dichlorobenzene-d4	16-110	%		
S 4	(FBP)	=	2-Fluorobiphenyl	43-116	%		
S 5	(NBZ)		Nitrobenzene-d5	35-114	%		
S 6	(PHL)	=	Phenol-d5	10-110	%		
S 7	(TBP)	=	2,4,6-Tribromophenol	10-123	%		
S 8	(TPH)	=	4-Terphenyl-d14	33-141	%		

^{*} Values outside of contract required QC limits

# Column to be used to flag recovery values

07/23/03 11:32

FORM II

SW8270C

#### 2C Surrogate Recovery - Lab QC Data

TCLP Semivolatile Organics

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LEVEL:

LOW

EPA	S1	S2	S3	S4	S5	S6	S7	S8	TOT
SAMPLE NO.	(2CP) #	(2FP) #	(DCB) #	(FBP) #	(NBZ) #	(PHL) #	(TBP) #	(TPH)	# OUT
01 MB-16618	51	45	57	58	54	43	65	76	0
02 LCS-16618	56	46	64	65	62	48	68	76	0

			QC Limits			
S 1	(2CP)	= 2-Chlorophenol-d4	33-110	%		
S 2	(2FP)	= 2-Fluorophenol	21-110	%		
S 3	(DCB)	= 1,2-Dichlorobenzene-d4	16-110	%		
S 4	(FBP)	= 2-Fluorobiphenyl	43-116	%		
S 5	(NBZ)	= Nitrobenzene-d5	35-114	%		
S 6	(PHL)	= Phenol-d5	10-110	%		
S 7	(TBP)	= 2,4,6-Tribromophenol	10-123	%		
S 8	(TPH)	= 4-Terphenyl-d14	33-141	%		

^{*} Values outside of contract required QC limits

# Column to be used to flag recovery values

07/23/03 11:32

FORM II

SW8270C

# 3 SPIKE/SPIKE DUPLICATE RECOVERY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Matrix Spike - Sample No.:

16-E-1003-T1-A

Analysis Date

5/20/03

Level:(low/med)

LOW

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	SPIKE CONCENTRATION (mg/L)	SPIKE % REC#	QC. LIMITS REC.
1,4-Dichlorobenzene	0.130	0	0.085	65	20-124
2,4,5-Trichlorophenol	0.800	0	0.76	95	43-117
2,4,6-Trichlorophenol	0.800	0	0.66	82	14-176
2,4-Dinitrotoluene	0.130	0	0.085	65	39-139
Hexachlorobenzene	0.130	0	0.071	55	5-152
Hexachlorobutadiene	0.130	0	0.072	55	24-116
Hexachloroethane	0.130	0	0.084	65	32-113
m,p-Cresols	1.60	0.039	1.2	72	27-112
Nitrobenzene	0.130	0	0.09	69	35-180
o-Cresol	0.800	0.057	0.61	69	31-110
Pentachlorophenol	0.800	0	0.77	96	14-176
Pyridine	1.30	0	0.084	6	0-141

	SPIKE ADDED	SPIKE DUP CONCENTRATION	SPK DUP	%	QCL	IMITS
COMPOUND	(mg/L)	(mg/L)	REC#	RPD#	RPD	REC.
1,4-Dichlorobenzene	0.130	0.091	70	7	40	20-124
2,4,5-Trichlorophenol	0.800	0.72	90	5	40	43-117
2,4,6-Trichlorophenol	0.800	0.66	82	0	40	14-176
2,4-Dinitrotoluene	0.130	0.083	64	2	40	39-139
Hexachlorobenzene	0.130	0.073	56	2	40	5-152
Hexachlorobutadiene	0.130	0.081	62	12	40	24-116
Hexachloroethane	0.130	0.093	72	10	40	32-113
m,p-Cresols	1.60	1.2	72	0	40	27-112
Nitrobenzene	0.130	0.09	69	0	40	35-180
o-Cresol	0.800	0.65	74	7	40	31-110
Pentachlorophenol	0.800	0.76	95	1	40	14-176
Pyridine	1.30	0.072	6	0	40	0-141

#	Column to	be	used	to	flag	recovery	and	RPD	values	with	an	asterisk	
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* Values outside of QC limits

RPD:

0 out of

12 outside limits

Spike Recovery:

out of

24 outside limits

07/23/03 11:33

FORM III

SW8270C

## 3A SPIKE RECOVERY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID

LCS-16618

Analysis Date

05/20/03

Level:(low/med)

LOW

File ID

A140TL1.D

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	SPIKE CONCENTRATION (mg/L)	SPIKE % REC#	QC. LIMITS REC.
1,4-Dichlorobenzene	0.130	0	0.089	68	20-124
2,4,5-Trichlorophenol	0.800	0	0.49	61	43-117
2,4,6-Trichlorophenol	0.800	0	0.46	57	14-176
2,4-Dinitrotoluene	0.130	0	0.081	62	39-139
Hexachlorobenzene	0.130	0	0.1	77	5-152
Hexachlorobutadiene	0.130	0	0.094	72	24-116
Hexachloroethane	0.130	0	0.087	67	32-113
m,p-Cresols	1.60	0	1	62	27-112
Nitrobenzene	0.130	0	0.089	68	35-180
o-Cresol	0.800	0	0.55	69	31-110
Pentachlorophenol	0.800	0	0.51	64	14-176
Pyridine	1.30	0	0.081	6	0-141

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery:

0 out of

12 outside limits

07/23/03 11:34

FORM III

SW8270C

#### CLIENT SAMPLE ID

LCS-16618 Lab Name: SPL, Inc. SPLLAF 03050225 Lab Code: SDG No.: LEACHATE Lab Sample ID: Matrix: LCS-16618 100.0 (g/mL) ML Lab File ID: Sample wt/vol: A140TL1.D Date Collected: Level: LOW Date Extracted: 5/16/03 % Moisture: Date Analyzed: 5/20/03 GC Column: ID: (mm) Dilution Factor: 1.0 Extract Volume: 1000 (ul) CONCENTRATION UNITS: mg/L

CAS NO.	COMPOUND	(mg/L or ug/Kg) mg/L	Q
106-46-7	1,4-Dichlorobenzene	0.089	
95-95-4	2,4,5-Trichlorophenol	0.49	
88-06-2	2,4,6-Trichlorophenol	0.46	
121-14-2	2,4-Dinitrotoluene	0.081	
118-74-1	Hexachlorobenzene	0.10	
87-68-3	Hexachlorobutadiene	0.094	
67-72-1	Hexachloroethane	0.087	
65794-96-9	m,p-Cresols	1.0	
98-95-3	Nitrobenzene	0.089	
95-48-7	o-Cresol	0.55	
87-86-5	Pentachlorophenol	0.51	
110-86-1	Pyridine	0.081	

Data File: \LAFTGT1\ee\chem\A.i\A030520.b\A140TL1.D

Report Date: 07-Jul-2003 09:04

#### SPL

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 20-MAY-2003 Instrument ID: A.i

Lab File ID: A140TL1.D Calibration Time: 11:09

Lab Smp Id: LCS LCS-16618

Level: LOW Analysis Type: SV

Quant Type: ISTD Operator: lmk Sample Type: WATER

Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

Misc Info: 8270 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
23 1,4-Dichlorobenze	105197	52599	210394	83653	-20.48
54 Naphthalene-d8	437603	218802	875206	325232	-25.68
86 Acenaphthene-d10	273232	136616	546464	198985	-27.17
120 Phenanthrene-d10	544898	272449	1089796	392493	-27.97
147 Chrysene-d12	609065	304533	1218130	476595	-21.75
157 Perylene-d12	446539	223270	893078	355082	-20.48

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	=======	======
23 1,4-Dichlorobenze	7.79	7.29	8.29	7.79	-0.00
54 Naphthalene-d8	9.99	9.49	10.49	9.98	-0.12
86 Acenaphthene-d10	13.08	12.58	13.58	13.07	-0.09
120 Phenanthrene-d10	15.64	15.14	16.14	15.62	-0.07
147 Chrysene-d12	22.15	21.65	22.65	22.13	-0.10
157 Perylene-d12	28.04	27.54	28.54	28.03	-0.04
872				cn co	

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Page 3

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140TL1.D

Report Date: 07-Jul-2003 09:04

#### SPL

#### RECOVERY REPORT

Client Name:

Sample Matrix: LIQUID

Client SDG: Fraction: SV

Lab Smp Id: LCS LCS-16618

Level: LOW

Operator: lmk

SampleType: LCS Quant Type: ISTD

Data Type: MS DATA

SpikeList File: tclps.spk

Sublist File: tclps.sub

Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m Misc Info: 8270_TCLP

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
28 2-Methylphenol	800.000	545.316	68.16	31-110
32 m,p-Cresols	1600.00	1038.74	64.92	27-112
228 3- & 4-Methylpheno	1600.00	1038.74	64.92	27-112
92 2,4-Dinitrotoluene	130.000	80.7293	62.10	39-139
115 Hexachlorobenzene	130.000	100.649	77.42	5-152
59 Hexachlorobutadien	130.000	94.3469	72.57	24-116
38 Hexachloroethane	130.000	86.9164	66.86	32-113
40 Nitrobenzene	130.000	89.3057	68.70	35-180
117 Pentachlorophenol	800.000	507.469	63.43	14-176
2 Pyridine	130.000	81.1818	62.45	0-141
71 2,4,5-Trichlorophe	800.000	486.080	60.76	43-117
70 2,4,6-Trichlorophe	800.000	463.753	57.97	14-176
24 1,4-Dichlorobenzen	130.000	88.9417	68.42	20-124

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 8 2-Fluorophenol \$ 15 Phenol-d5 \$ 20 2-Chlorophenol-d4 \$ 26 1,2-Dichlorobenzen \$ 39 Nitrobenzene-d5 \$ 72 2-Fluorobiphenyl \$ 107 2,4,6-Tribromophen \$ 136 4-Terphenyl-d14	750.000 750.000 750.000 500.000 500.000 750.000 500.000	348.241 361.899 421.172 320.039 307.714 324.128 508.482 381.127	46.43 48.25 56.16 64.01 61.54 64.83 67.80 76.23	21-110 10-110 33-110 16-110 35-114 43-116 10-123 33-141

#### 4B

#### SEMIVOLATILE METHOD BLANK SUMMARY

#### EPA SAMPLE NO.

MB-16618

Lab Name:

SPL, Inc.

Lab Code:

**SPLLAF** 

SDG No.:

03050225

Lab File ID:

A140B01.D

Lab Sample ID:

MB-16618

Instrument ID:

Date Extracted:

5/16/03 3:40:53 PM

Matrix: (soil/water)

WATER

Date Analyzed:

5/20/03

Time Analyzed:

12:47

# THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	LCS-16618	LCS-16618	A140TL1.D	5/20/03	13:36
2	16-E-1003-T1-A	03050225-15D	A140S01.D	5/20/03	14:25
1	16-E-1003-T1-AMS	03050225-15DMS	A140K01.D	5/20/03	15:14
1	16-E-1003-T1-AMSD	03050225-15DMSD	A140KD1.D	5/20/03	16:03

#### 5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code: Lab File ID: SPLLAF

514.b\A134DF1.D

DFTPP Injection Date:

5/14/03

Instrument ID:

Α

**DFTPP Injection Time:** 

9:35

n/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	41.52
68	Less than 2.0% of mass 69	0.00 (0.00)1
69	Mass 69 relative abundance	44.90
70	Less than 2.0% of mass 69	0.00 (0.00)1
127	40.0 - 60.0% of mass 198	47.26
197	Less than 1.0% of mass 198	0.37
198	Base peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.74
275	10.0 - 30.0% of mass 198	25.77
365	Greater than 1% of mass 198	2.45
441	Present, but less than mass 443	12.01
442	40.0 - 110.0% of mass 198	82.56
443	17.0 - 23.0% of mass 442	16.11 (19.52)2

1-Value is % mass

69

2-Value is % mass

442

# THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ICAL-100	ICAL-100	A134IC7.D	5/14/03	11:58
02	ICAL-1	ICAL-1	A134IC1.D	5/14/03	12:47
03	ICAL-5	ICAL-5	A134IC2.D	5/14/03	13:35
04	ICAL-10	ICAL-10	A134IC3.D	5/14/03	14:23
05	ICAL-20	ICAL-20	A134IC4.D	5/14/03	15:12
06	ICAL-50	ICAL-50	A134IC5.D	5/14/03	16:01
07	ICAL-80	ICAL-80	A134IC6.D	5/14/03	16:49
08	ICAL-120	ICAL-120	A134IC8.D	5/14/03	17:38
09	ICAL-150	ICAL-150	A134IC9.D	5/14/03	18:26
10	ICAL-200	ICAL-200	A134IC10.D	5/14/03	19:14

# Form 6 Initial Calibration Data

Lab Name:

SPL, Inc.

SDG No .:

03050225

Lab Code:

SPLLAF

Instrument ID:

Α

Calibration Start:

05/14/03 11:58

Calibration Finish:

05/14/03 19:14

GC Column:

ID:

(mm)

LAB FILE ID: ICAL-1=	A134IC1.D	ICAL-80=	A134IC6.D	
ICAL-5=	A134IC2.D	ICAL-100=	A134IC7.D	
ICAL-10=	A134IC3.D	ICAL-120=	A134IC8.D	
ICAL-20=	A134IC4.D	ICAL-150=	A134IC9.D	
ICAL-50=	A134IC5.D	ICAL-200=	A134IC10.D	

		Office 1					10/12 200	71104	1010.0					
COMPOUND		ICAL-1	ICAL-5	ICAL-10	ICAL-20	ICAL-50	ICAL-80	ICAL-100	ICAL-120	ICAL-150	ICAL-200	RRF	% RSD	R²
1,4-Dichlorobenzene	7 <b>*</b> 1	1.9068796	1.5699627	1.6368427	1.8398055	1.657579	1.620037	1.55809667	1.6087865	1.5167888	1.5099573	1.64247	8.02812	*
2,4,5-Trichlorophenol		0.5020500	0.3649781	0.3850650	0.4596533	0.4266027	0.4242091	0.4179419	0.4165948	0.4128403	0.4038854	0.42138	1,000,000,000	
2,4,6-Trichlorophenol	*	0.4333837	0.3452372	0.3599449	0.4205236	0.3904496	0.3878644	0.38782230		0.3779936		0.38558	6.81482	
2,4-Dinitrotoluene		0.4190836	0.3752379	0.4383788	0.5076985	0.4839405	0.4864609	0.48578039		0.4737915		0.46290	8.67380	
Hexachlorobenzene		0.2936003	0.2615921	0.2616303	0.2987717	0.2650423	0.2559876	0.24688611	0.2454019	0.2444619	0.2458074		7.49693	
Hexachlorobutadiene	*	0.2088102	0.1669255	0.1714035	0.2001096	0.1815365	0.1729295	0.16975336				0.1775		
Hexachloroethane		0.6219257	0.5190736	0.6042746	0.6872728	0.6355421	0.6042505					0.59108	8.4645	
m,p-Cresols		2.0515801	1.6319660	1.7157843	1.9577781	1.8121327	1.6732062	1.64861952			222222222222222222	1.72314	9.84732	
Nitrobenzene		2.0335557	1.7477219	1.8494999	2.0745228	1.9597516	1.8686958	1.83204062	1.8356615	1.7692967	1.7504062	1.87212		
o-Cresol		1.4689037	1.1888213	1.2993906	1.4579909	1.3819756	1.3063736	1.27245815	1.2962738	1.2232259		1.31141	7.3929	
Pentachlorophenol		0	0	0.0705365	0.1064940	0.1299299	0.1353431	0.13783952	0.1400351	0.1428161	0.1461555	0.12614	20.2897	0 99966
Pyridine		1.2361027	1.5552712	1.7646804	1.7239776	1.5278491	1.8401401	1.80598458		1.79345		1.66541	10.9904	0.00000
1,2-Dichlorobenzene-d4		1.2654134	0.9650383	1.0178656	1.1649422	1.0720790	1.0160948	0.97799511	750700000000000000000000000000000000000			1.03648	10.0930	
2,4,6-Tribromophenol		0.1074147	0.1024229	0.1129194	0.1306484	0.1226011	0.1209768	0.11830524			0.1179559	0.11662	6.74176	
2-Chlorophenol-d4		1.4571121	1.2191789	1.2960593	1.5194329	1.4307272	1.3906708	1.34149708		1.2952576		1.36168	6.58767	
2-Fluorobiphenyl		1.9712258	1.5541313	1.5785137	1.8329307	1.6259434	1.5558066	1.53037700	1.5456595	1.5235479		1.61858	9.76787	_
2-Fluorophenol		1.2347551	1.1859666	1.2008937	1.4223667	1.4129051	1.3894111	1.35927027	1.3874877	1.3577468	1.3527823	1.33036	6.67021	
4-Terphenyl-d14		1.1183631	0.9254631	0.9712437	1.1324459	1.0220051	1.0182006		100200000000000000000000000000000000000	0.956651	0.9772395	1.00457	7.00847	
Nitrobenzene-d5		2.3792197	2.0045780	2.1454711	2.4426836		2.2076642	2.15663720				2.20311	6.17886	
Phenol-d5		2.0813961	1.7817001	1.9354084	2.1611440	2.0936143		2.00959564			1.9388552	2.00052		

^{*} Continuing Calibration Check

SW8270C

FORM VI

System Performance Check Compounds
07/23/03 11:34

#### SPL

# INITIAL CALIBRATION DATA

Start Cal Date : 14-MAY-2003 11:58 End Cal Date : 14-MAY-2003 19:14 Ouant Method : ISTD

Quant Method : ISTD Target Version : 4.00 Integrator : HP RTE

Method file : \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m

Cal Date : 07-Jul-2003 08:42 LYNNK

# Calibration File Names:

Level 1: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC1.D
Level 3: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC2.D
Level 4: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC3.D
Level 5: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC4.D
Level 6: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC5.D
Level 7: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC6.D
Level 8: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC7.D
Level 9: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC8.D
Level 10: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC9.D
Level 11: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC10.D

Omega	#	2381
curve	1	

	1.0000	5.0000	10.0000	20.0000	50.0000	80.0000	1		Coefficients		%RSD
Compound	Level 1	Level 3	Level 4	Level 5	Level 6	Level 7	Curve	р	ml	m2	or R^2
	100.0000     Level 8	120.0000   Level 9	150.0000   Level 10	200.0000   Level 11							
28 2-Methylphenol	1.46890	1,18882	3	1.45799		1.30637	====				
	1.27246	1.29627	1.22323	1.21865			AVRG		1.31141		7.39290

#### SPL

# INITIAL CALIBRATION DATA

Start Cal Date : 14-MAY-2003 11:58
End Cal Date : 14-MAY-2003 19:14
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m
Cal Date : 07-Jul-2003 08:42 LYNNK

Compound	1.0000     Level 1	5.0000   Level 3	10.0000   Level 4	20.0000   Level 5	50.0000   Level 6	80.0000 Level 7	  Curve	Coefficients b m1	m2	%RSD   or R^2
	100.0000     Level 8	120.0000   Level 9	150.0000   Level 10	200.0000   Level 11						
32 m,p-Cresols	2.05158	1.63197			1.81213	1.67321	AVRG	1.72314		9.84732
228 3- & 4-Methylphenol	2.05158	1.63197			1.81213	1.67321	AVRG	1.72314		9.84732
24 1,4-Dichlorobenzene	1.90688	1.56996  1.60879	1.63684	- 200	1.65758	1.62004	AVRG	1.64247		8.0281
92 2,4-Dinitrotoluene	0.41908	0.37524	0.43838		0.48394	0.48646	AVRG	0.46290		8.67380
115 Hexachlorobenzene	0.29360	0.26159	0.26163	0.29877	0.26504	0.25599	AVRG	0.26192		7.49693

#### SPL

# INITIAL CALIBRATION DATA

Start Cal Date : 14-MAY-2003 11:58
End Cal Date : 14-MAY-2003 19:14
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m
Cal Date : 07-Jul-2003 08:42 LYNNK

Compound	1.0000     Level 1	5.0000   Level 3	10.0000   Level 4	20.0000   Level 5	50.0000   Level 6	80.0000 Level 7			oefficients		%RSD
				nevel 3	rever e	Level /	Curve	ь	ml	m2	or R^2
	100.0000     Level 8	120.0000   Level 9	150,0000   Level 10	200.0000   Level 11							
59 Hexachlorobutadiene	0.20881	0.16693  0.16839	(	0.20011 0.16584	0.18154	0.17293	==== =    AVRG		0.17750		8.44990
38 Hexachloroethane	0.62193	0.51907	0.60427	0.68727	0.63554	0.60425	AVRG		0.59108		8.46450
40 Nitrobenzene	2.03356	1.74772	1.84950	2.07452	1.95975	1.86870	AVRG		1.87212		6.14287
117 Pentachlorophenol	190294	208960	11322  269826	32035  338608	98678	158035	LINR	0.16432	0.14969		0.99966
2 Pyridine	1.23610	1.55527	1.76468	1.72398	1.52785	1.84014	AVRG		1.66541		10.99041

#### SPL

#### INITIAL CALIBRATION DATA

Start Cal Date : 14-MAY-2003 11:58 End Cal Date : 14-MAY-2003 19:14

Quant Method : ISTD Target Version : 4.00
Integrator : HP RTE
Method file : \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m
Cal Date : 07-Jul-2003 08:42 LYNNK

	1.0000	5.0000	10.0000	20.0000	50.0000	80.0000			Coefficients		*RSD
Compound	Level 1	Level 3	Level 4	Level 5	Level 6	Level 7	Curve	b	m1	m2	or R^2
											1
	100.0000	120.0000	150.0000	200.0000	1		1				1
	Level 8	Level 9	Level 10	Level 11	1		1				1
			=========		******	========					-
70 2,4,6-Trichlorophenol	0.43338	0.34524	0.35994	0.42052	0.39045	0.38786			I I		1
	0.38782	0.38520	0.37799	0.36737			AVRG		0.38558		6.81482
71 2,4,5-Trichlorophenol	0.50205		0.38507	0.45965	0.42660	0.42421	-				1
	0.41794	0.41659	0.41284	0.40389			AVRG		0.42138		8.99204
8 2-Fluorophenol	1.23476	1,18597	1.20089	1.42237	1.41291	1.38941	I				 1
	1.35927	1.38749	1.35775	1.35278		100000000000000000000000000000000000000	AVRG		1.33036		6.67021
15 Phenol-d5	2.08140	1.78170	1.93541	2.16114	2.09361	2.05492			0.550.030.551/5. 		1
	2.00960	2.01489	1.93366	1.93886	ļ		AVRG		2.00052		5.39023
20 2-Chlorophenol-d4	1.45711	1.21918	1.29606	1.51943	1.43073	1.39067	-				
	1.34150	1.36338	1.29526	1.30351	1		AVRG		1.36168		6.58767

#### SPL

# INITIAL CALIBRATION DATA

Start Cal Date : 14-MAY-2003 11:58
End Cal Date : 14-MAY-2003 19:14
Quant Method : ISTD
Target Version : 4.00
Integrator : HP RTE
Method file : \\LAFTGT1\ee\chem\
Cal Date : 07-Jul-2003 08:42

: HP RTE : \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m : 07-Jul-2003 08:42 LYNNK

Compound	1.0000     Level 1	5.0000 Level 3	10.0000   Level 4	20.0000   Level 5	50.0000   Level 6	80.0000 Level 7	Curve	Coefficients b m1	m2	%RSD or R^2
	   100.0000     Level 8	120.0000   Level 9	150.0000   Level 10	200.0000   Level 11		*********			THE .	
\$ 26 1,2-Dichlorobenzene-d4	1.26541	0.96504	1.01787	91 "TOURNESSEE	1.07208	1.01609	AVRG	1.03648		10.09301
\$ 39 Nitrobenzene-d5	2.37922	2.00458	2.14547		2.31050	2.20766	AVRG	2.20311		6.17886
\$ 72 2-Fluorobiphenyl	1.97123	1.55413	1.57851		1.62594	1.55581	AVRG	1.61858		9.76787
\$ 107 2,4,6-Tribromophenol	0.10741	0.10242 0.11624	0.11292		0.12260	0.12098	AVRG	0.11662		6.74176
\$ 136 4-Terphenyl-d14	1.11836	0.92546 0.94213		1.13245	1.02201	1.01820	AVRG	1.00457		7.00847

Page 3

#### SPL

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i

Lab File ID: A134IC1.D

Calibration Date: 14-MAY-2003 Calibration Time: 11:58

Lab Smp Id: ICAL Analysis Type: SV

Level:

Quant Type: ISTD

Sample Type:

Operator: 1mk

Method File: \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m Misc Info: 8270_TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================		========	========	========	
23 1,4-Dichlorobenze	106340	53170	212680	118728	11.65
54 Naphthalene-d8	459542	229771	919084	508979	10.76
86 Acenaphthene-d10	276604	138302	553208	310487	12.25
120 Phenanthrene-d10	552219	276110	1104438	608855	10.26
147 Chrysene-d12	578390	289195	1156780	690688	19.42
157 Perylene-d12	407527	203764	815054	476432	16.91

		LIMIT		l
STANDARD	LOWER	UPPER	SAMPLE	%DIFF
========	=======	=======	========	======
7.96	7.46	8.46	7.95	-0.14
10.16	9.66	10.66	10.17	0.00
13.26	12.76		13.26	0.00
15.84	15.34		10000000 THE 100000	-0.07
22.57	22.07			-0.05
28.43	27.93	28.93	28.42	-0.04
	7.96 10.16 13.26 15.84 22.57	7.96 7.46 10.16 9.66 13.26 12.76 15.84 15.34 22.57 22.07	7.96 7.46 8.46 10.16 9.66 10.66 13.26 12.76 13.76 15.84 15.34 16.34 22.57 22.07 23.07	7.96 7.46 8.46 7.95 10.16 9.66 10.66 10.17 13.26 12.76 13.76 13.26 15.84 15.34 16.34 15.83 22.57 22.07 23.07 22.56

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

SPL

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Lab File ID: A134IC2.D Calibration Time: 11:58

Lab Smp Id: ICAL ICAL-5

Analysis Type: SV Level:

Quant Type: ISTD Sample Type:

Operator: lmk
Method File: \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m

Misc Info: 8270 TCLP

Instrument ID: A.i

	7	AREA	LIMIT	00181539 000-050-050-050-0	2007 800 300 400 800
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	========	========	========	======
23 1,4-Dichlorobenze	106340	53170	212680	114897	8.05
54 Naphthalene-d8	459542	229771	919084	489368	6.49
86 Acenaphthene-d10	276604	138302	553208	297859	7.68
120 Phenanthrene-d10	552219	276110	1104438	572372	3.65
147 Chrysene-d12	578390	289195	1156780	646552	11.78
157 Perylene-d12	407527	203764	815054	444814	9.15

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
================	=======	=======	========	========	======
23 1,4-Dichlorobenze	7.96	7.46	8.46	7.96	-0.01
54 Naphthalene-d8	10.16	9.66	10.66	10.16	-0.01
86 Acenaphthene-d10	13.26	12.76	13.76	13.26	
120 Phenanthrene-d10	15.84	15.34	16.34	15.83	-0.08
147 Chrysene-d12	22.57	22.07	23.07	22.56	-0.05
157 Perylene-d12	28.43	27.93	28.93	28.42	-0.04

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT. RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Page 3

Calibration Date: 14-MAY-2003

Data File: \LAFTGT1\ee\chem\A.i\A030514.b\A134IC3.D

Report Date: 07-Jul-2003 07:45

#### SPL

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i

Lab File ID: A134IC3.D Lab Smp Id: ICAL ICAL-10 Calibration Date: 14-MAY-2003 Calibration Time: 11:58

Analysis Type: SV

Level:

Quant Type: ISTD

Sample Type:

Operator: lmk
Method File: \LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m

Misc Info: 8270 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=============	=======	========	=======	========	======
23 1,4-Dichlorobenze	106340	53170	212680	124877	17.43
54 Naphthalene-d8	459542	229771	919084	547550	19.15
86 Acenaphthene-d10	276604	138302	553208	338374	22.33
120 Phenanthrene-d10	552219	276110	1104438	642051	16.27
147 Chrysene-d12	578390	289195	1156780	692510	19.73
157 Perylene-d12	407527	203764	815054	470240	15.39

		RT I	LIMIT		-
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
================	========	========	=======	========	======
23 1,4-Dichlorobenze	7.96	7.46	8.46	7.96	0.01
54 Naphthalene-d8	10.16	9.66	10.66	10.17	0.01
86 Acenaphthene-d10	13.26	12.76	13.76	13.26	
120 Phenanthrene-d10	15.84	15.34	16.34	15.84	0.00
147 Chrysene-d12	22.57	22.07	23.07	22.56	-0.05
157 Perylene-d12	28.43	27.93	28.93	28.42	-0.04

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\A.i\A030514.b\A134IC4.D Report Date: 07-Jul-2003 07:45

SPL

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i

Calibration Date: 14-MAY-2003 Lab File ID: A134IC4.D Calibration Time: 11:58

Lab Smp Id: ICAL ICAL-20

Analysis Type: SV Level:

Quant Type: ISTD Sample Type: Operator: 1mk

Method File: \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m

Misc Info: 8270 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	======
23 1,4-Dichlorobenze	106340	53170	212680	122164	14.88
54 Naphthalene-d8	459542	229771	919084	531139	15.58
86 Acenaphthene-d10	276604	138302	553208	324153	17.19
120 Phenanthrene-d10	552219	276110	1104438	601630	8.95
147 Chrysene-d12	578390	289195	1156780	627811	8.54
157 Perylene-d12	407527	203764	815054	420656	3.22
100c0		2			

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=============	========	========	========	========	======
23 1,4-Dichlorobenze	7.96	7.46	8.46	7.96	-0.03
54 Naphthalene-d8	10.16	9.66	10.66	10.16	-0.02
86 Acenaphthene-d10	13.26	12.76	13.76	13.26	-0.02
120 Phenanthrene-d10	15.84	15.34	16.34	15.84	-0.02
147 Chrysene-d12	22.57	22.07	23.07	22.56	
157 Perylene-d12	28.43	27.93	28.93	28.42	-0.05

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\A.i\A030514.b\A134IC5.D

Report Date: 07-Jul-2003 07:45

#### SPL

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 14-MAY-2003 Calibration Time: 11:58 Instrument ID: A.i

Lab File ID: A134IC5.D

Lab Smp Id: ICAL ICAL-50

Level: Analysis Type: SV

Quant Type: ISTD Sample Type:

Operator: 1mk

Method File: \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m

Misc Info: 8270 TCLP

		AREA	LIMIT		88
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	=======		=======	======
23 1,4-Dichlorobenze	106340	53170	212680	119627	12.49
54 Naphthalene-d8	459542	229771	919084	519653	13.08
86 Acenaphthene-d10	276604	138302	553208	317892	14.93
120 Phenanthrene-d10	552219	276110	1104438	607577	10.02
147 Chrysene-d12	578390	289195	1156780	646623	11.80
157 Perylene-d12	407527	203764	815054	444942	9.18
	Y		NU-		·

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
			=======		
23 1,4-Dichlorobenze	7.96	7.46	8.46	7.96	-0.02
54 Naphthalene-d8	10.16	9.66	10.66	10.16	-0.02
86 Acenaphthene-d10	13.26	12.76	13.76	13.26	-0.0
120 Phenanthrene-d10	15.84	15.34	16.34	15.84	-0.0
147 Chrysene-d12	22.57	22.07	23.07	22.57	-0.0
157 Perylene-d12	28.43	27.93	28.93	28.42	-0.0

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

#### SPL

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i Calibration Date: 14-MAY-2003

Lab File ID: A134IC6.D Calibration Time: 11:58

Lab Smp Id: ICAL ICAL-80

Analysis Type: SV Level:

Quant Type: ISTD Sample Type:

Operator: 1mk

Method File: \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m

Misc Info: 8270 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	=======	======
23 1,4-Dichlorobenze	106340	53170	212680	113515	6.75
54 Naphthalene-d8	459542	229771	919084	490729	6.79
86 Acenaphthene-d10	276604	138302	553208	301461	8.99
120 Phenanthrene-d10	552219	276110	1104438	583831	5.72
147 Chrysene-d12	578390	289195	1156780	604596	4.53
157 Perylene-d12	407527	203764	815054	421534	3.44

		RT I	LIMIT	0/12/02/03	00-1-07-1-07
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	======
23 1,4-Dichlorobenze	7.96	7.46	8.46	7.96	-0.01
54 Naphthalene-d8	10.16	9.66	10.66	10.16	-0.01
86 Acenaphthene-d10	13.26	12.76	13.76	13.26	-0.01
120 Phenanthrene-d10	15.84	15.34	16.34	15.84	
147 Chrysene-d12	22.57	22.07	23.07	22.57	-0.00
157 Perylene-d12	28.43	27.93	28.93	28.42	

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\A.i\A030514.b\A134IC7.D

Report Date: 07-Jul-2003 07:46

#### SPL

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i Calibration Date: 14-MAY-2003

Calibration Time: 11:58 Lab File ID: A134IC7.D

Lab Smp Id: ICAL ICAL-100

Analysis Type: SV Level:

Quant Type: ISTD Sample Type:

Operator: 1mk
Method File: \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m
Misc Info: 8270_TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	=======		========	======
23 1,4-Dichlorobenze	106340	53170	212680	106340	0.00
54 Naphthalene-d8	459542	229771	919084	459542	0.00
86 Acenaphthene-d10	276604	138302	553208	276604	0.00
120 Phenanthrene-d10	552219	276110	1104438	552219	0.00
147 Chrysene-d12	578390	289195	1156780	578390	0.00
157 Perylene-d12	407527	203764	815054	407527	0.0
5					

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========	========	
23 1,4-Dichlorobenze	7.96	7.46	8.46	7.96	0.00
54 Naphthalene-d8	10.16	9.66	10.66	10.16	0.00
86 Acenaphthene-d10	13.26	12.76	13.76	13.26	0.00
120 Phenanthrene-d10	15.84	15.34	16.34	15.84	0.00
147 Chrysene-d12	22.57	22.07	23.07	22.57	0.00
157 Perylene-d12	28.43	27.93	28.93	28.43	0.00

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

Data File: \\LAFTGT1\ee\chem\A.i\A030514.b\A134IC8.D Page 3

Report Date: 07-Jul-2003 07:46

#### SPL

## INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i Calibration Date: 14-MAY-2003

Lab File ID: A134IC8.D Calibration Time: 11:58

Lab Smp Id: ICAL ICAL-120

Analysis Type: SV Level:

Quant Type: ISTD Sample Type:

Operator: lmk
Method File: \LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m

Misc Info: 8270 TCLP

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COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	=======	=======	========	========	======
23 1,4-Dichlorobenze	106340	53170	212680	93849	-11.75
54 Naphthalene-d8	459542	229771	919084	408308	-11.15
86 Acenaphthene-d10	276604	138302	553208	247057	-10.68
120 Phenanthrene-d10	552219	276110	1104438	497399	-9.93
147 Chrysene-d12	578390	289195	1156780	554650	-4.10
157 Perylene-d12	407527	203764	815054	396458	-2.72

10 TO STANDAR OF THE STANDAR	188.07-07-07-07-07-07-07-07-07-07-07-07-07-0	RT I	LIMIT	CONTRACTOR OF THE	30
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
===================	=======	========	========	========	======
23 1,4-Dichlorobenze	7.96	7.46	8.46	7.96	-0.04
54 Naphthalene-d8	10.16	9.66	10.66	10.17	0.08
86 Acenaphthene-d10	13.26	12.76	13.76	13.27	0.06
120 Phenanthrene-d10	15.84	15.34	16.34	15.84	-0.02
147 Chrysene-d12	22.57	22.07	23.07	22.57	-0.01
157 Perylene-d12	28.43	27.93	28.93	28.43	-0.01

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = - 50% of internal standard area.

#### SPL

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i Calibration Date: 14-MAY-2003

Lab File ID: A134IC9.D Calibration Time: 11:58

Lab Smp Id: ICAL ICAL-150

Analysis Type: SV Level:

Quant Type: ISTD Sample Type:

Operator: 1mk

Method File: \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m

Misc Info: 8270 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	=======	=======	======
23 1,4-Dichlorobenze	106340	53170	212680	101496	-4.56
54 Naphthalene-d8	459542	229771	919084	425057	-7.50
86 Acenaphthene-d10	276604	138302	553208	255435	-7.65
120 Phenanthrene-d10	552219	276110	1104438	503820	-8.76
147 Chrysene-d12	578390	289195	1156780	534336	-7.62
157 Perylene-d12	407527	203764	815054	389542	-4.41

	RT I	LIMIT		
STANDARD	LOWER	UPPER	SAMPLE	%DIFF
========	========	========	========	======
7.96	7.46	8.46	7.96	-0.04
10.16	9.66	10.66	10.17	0.08
13.26	12.76	13.76	13.27	0.06
15.84	15.34	16.34	15.84	-0.02
22.57	22.07	23.07	22.58	0.04
28.43	27.93	28.93	28.43	-0.01
	7.96 10.16 13.26 15.84 22.57	STANDARD LOWER	7.96 7.46 8.46 10.16 9.66 10.66 13.26 12.76 13.76 15.84 15.34 16.34 22.57 22.07 23.07	STANDARD         LOWER         UPPER         SAMPLE

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

#### SPL

#### INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Calibration Date: 14-MAY-2003 Instrument ID: A.i

Lab File ID: A134IC10.D Calibration Time: 11:58

Lab Smp Id: ICAL ICAL-200

Level: Analysis Type: SV

Quant Type: ISTD Sample Toperator: lmk
Method File: \\LAFTGT1\ee\chem\A.i\A030514.b\ABNAW2.m Sample Type:

Misc Info: 8270 TCLP

		AREA	LIMIT		
COMPOUND	STANDARD	RD LOWER UPPER SAMPLE S40 53170 212680 92927 542 229771 919084 395260 504 138302 553208 239612 219 276110 1104438 463353 390 289195 1156780 472810	%DIFF		
	lorobenze	======			
23 1,4-Dichlorobenze	106340	53170	212680	92927	-12.61
54 Naphthalene-d8	459542	229771	919084	395260	-13.99
86 Acenaphthene-d10	276604	138302	553208	239612	-13.37
120 Phenanthrene-d10	552219	276110	1104438	463353	-16.09
147 Chrysene-d12	578390	289195	1156780	472810	-18.25
157 Perylene-d12	407527	203764	815054	332107	-18.51

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	========		======
23 1,4-Dichlorobenze	7.96	7.46	8.46	7.96	0.01
54 Naphthalene-d8	10.16	9.66	10.66	10.17	0.01
86 Acenaphthene-d10	13.26	12.76	13.76	13.26	0.01
120 Phenanthrene-d10	15.84	15.34	16.34	15.84	0.01
147 Chrysene-d12	22.57	22.07	23.07	22.58	0.06
157 Perylene-d12	28.43	27.93	28.93	28.43	0.00

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

#### 5B

# SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab File ID: 520.b\A140DF2.D

DFTPP Injection Date:

5/20/03

Instrument ID:

Α

DFTPP Injection Time:

10:46

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	36.44
68	Less than 2.0% of mass 69	0.31 (0.78)1
69	Mass 69 relative abundance	39.47
70	Less than 2.0% of mass 69	0.00 (0.00)1
127	40.0 - 60.0% of mass 198	45.56
197	Less than 1.0% of mass 198	0.00
198	Base peak, 100% relative abundance	100.00
199	5.0 - 9.0% of mass 198	6.57
275	10.0 - 30.0% of mass 198	26.59
365	Greater than 1% of mass 198	2.89
441	Present, but less than mass 443	13.76
442	40.0 - 110.0% of mass 198	98.28
443	17.0 - 23.0% of mass 442	18.85 (19.18)2

1-Value is % mass

69

2-Value is % mass

442

#### THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV-100	CCV-100	A140CC1.D	5/20/03	11:09
02	CCV-100	CCV-100	A140CC2.D	5/20/03	11:58
03	MB-16618	MB-16618	A140B01.D	5/20/03	12:47
04	LCS-16618	LCS-16618	A140TL1.D	5/20/03	13:36
05	16-E-1003-T1-A	03050225-15D	A140S01.D	5/20/03	14:25
06	16-E-1003-T1-AMS	03050225-15DMS	A140K01.D	5/20/03	15:14
07	16-E-1003-T1-AMSD	03050225-15DMSD	A140KD1.D	5/20/03	16:03

# 7 CONTINUING CALIBRATION CHECK

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID:

Α

Calibration Date:

5/20/03

Time:

11:09 AM

Lab File ID:

A140CC1.D

Init. Calib. Dates:

5/14/03

5/14/03

Init. Calib. Times:

11:58

19:14

GC Column:

ID:

(mm)

COMPOUND	CURVE	AVG. RF/RRF	STD. RF/RRF	MIN RRF	%D	MAX %D	THEO	RCVR CONC	%D²	MAX %D²	
1,2-Dichlorobenzene-d4	AVRG	1.03648	1.018		1.813						1
1,4-Dichlorobenzene	AVRG	1.64247	1.622		1.237	20.0					
2,4,5-Trichlorophenol	AVRG	0.42138	0.440		4.481						1
2,4,6-Tribromophenol	AVRG	0.11662	0.124		6.073						1
2,4,6-Trichlorophenol	AVRG	0.38558	0.399		3.420	20.0					
2,4-Dinitrotoluene	AVRG	0.46290	0.506		9.287						1
2-Chlorophenol-d4	AVRG	1.36168	1.385		1.724						į.
2-Fluorobiphenyl	AVRG	1,61858	1.598		1.269						1
2-Fluorophenol	AVRG	1.33036	1.432		7.649						ĺ
4-Terphenyl-d14	AVRG	1.00457	0.998		0.615						1
Hexachlorobenzene	AVRG	0.26192	0.264		0.763						1
Hexachlorobutadiene	AVRG	0.17750	0.183		2.919	20.0					
Hexachloroethane	AVRG	0.59108	0.597		0.938						
Nitrobenzene	AVRG	1.87212	1.831		2.182						1
Nitrobenzene-d5	AVRG	2.20311	2.164		1.795						İ
o-Cresol	AVRG	1.31141	1.341		2.229						1
Pentachlorophenol	1ORDR						100	110	10.0	20	1
Phenol-d5	AVRG	2.00052	2.063		3.124						
Pyridine	AVRG	1.66541	1.611		3.268						1

^{*} Continuing Calibration Check

^{**} System Performance Check Compounds

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140CC1.D

Report Date: 07-Jul-2003 08:57

#### SPL

#### CONTINUING CALIBRATION COMPOUNDS

Instrument ID: A.i

Injection Date: 20-MAY-2003 11:09
Init. Cal. Date(s): 14-MAY-2003 16-MAY-2003 Lab File ID: A140CC1.D

Init. Cal. Times: 11:58 01:11

Analysis Type: Init. Cal. Times: 1
Lab Sample ID: CCV CCV-100 Quant Type: ISTD
Method: \LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

		2	1	MIN	-	MAX
COM	POUND	RRF	RF100	RRF	%D	%D
2	Pyridine	1.66543	1.61099	0.005	-3.3	20.
3	N-Nitrosodimethylamine	0.86932	0.89592	0.005	3.1	20.
16	Phenol	2.18778	2.20307	0.005	0.7	20.
18	Aniline	2.54242	2.55719	0.005	0.6	20.
19	Bis(2-Chloroethyl)ether	1.62753	1.59577	0.005	-2.0	20.
21	2-Chlorophenol	1.43757	1.43789	0.005	0.0	20.
22	1,3-Dichlorobenzene	1.61489	1.61574	0.005	0.1	20.
24	1,4-Dichlorobenzene	1.64247	1.62216	0.005	-1.2	20.
25	Benzyl alcohol	1.01507	0.98177	0.005	-3.3	20.
27	1,2-Dichlorobenzene	1.65918	1.59882	0.005	-3.6	20.
28	2-Methylphenol	1.31141	1.34063	0.005	2.2	20.
216	o-Cresol	1.31141	1.34063	0.005	2.2	20.
29	Bis(2-chloroisopropyl)ether	0.50966	0.50597	0.005	-0.7	20.
32	m,p-Cresols	1.72314	1.70977	0.005	-0.8	20.
228	3- & 4-Methylphenol	1.72314	1.70977	0.005	-0.8	20.
1 214	Cresols, Total	1.58589	1.58673	0.005	0.1	20.
36	N-Nitrosodi-n-propylamine	1.38097	1.32074	0.050	-4.4	20.
38	Hexachloroethane	0.59108	0.59662	0.005	0.9	20.
40	Nitrobenzene	1.87212	1.83126	0.005	-2.2	20.
42	Isophorone	0.81275	0.83437	0.005	2.7	20.
43	2-Nitrophenol	0.19222	0.21084	0.005	9.7	20.
44	2,4-Dimethylphenol	0.32738	0.35188	0.005	7.5	20.
47	Benzoic acid	0.22367	0.23221	0.005	3.8	20.
46	Bis(2-Chloroethoxy)methane	0.50750	0.51422	0.005	1.3	20.
49	2,4-Dichlorophenol	0.30135	0.32171	0.005	6.8	20.
52	1,2,4-Trichlorobenzene	0.35289	0.35798	0.005	1.4	20.
55	Naphthalene	1.12786	1.13430	0.005	0.6	20.
56	4-Chloroaniline	0.26034	0.27741	0.005	6.6	20.
59	Hexachlorobutadiene	0.17750	0.18268	0.005	2.9	20.
63	4-Chloro-3-methylphenol	0.38794	0.41044	0.005	5.8	20.
66	2-Methylnaphthalene	0.67365	0.68279	0.005	1.4	20.
67	1-Methylnaphthalene	0.67545	0.68421	0.005	1.3	20.
69	Hexachlorocyclopentadiene	109	100	0.050	-8.7	20,
71	2,4,5-Trichlorophenol	0.42138	0.44026	0.005	4.5	20.
70	2,4,6-Trichlorophenol	0.38558	0.39876	0.005	3.4	20.
			1			

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140CC1.D Report Date: 07-Jul-2003 08:57

SPL

#### CONTINUING CALIBRATION COMPOUNDS

Injection Date: 20-MAY-2003 11:09 Instrument ID: A.i

Lab File ID: A140CC1.D Init. Cal. Date(s): 14-MAY-2003 16-MAY-2003

01:11

Analysis Type: Init. Cal. Times: 11:58
Lab Sample ID: CCV CCV-100 Quant Type: ISTD
Method: \LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

				MIN		MAX
COM	POUND	RRF	RF100	RRF	%D	%D
74	2-Chloronaphthalene	1.268	05  1.25331	0.005	-1.2	20.0
77	2-Nitroaniline	0.452	59 0.49049	0.005	8.4	20.0
80	Dimethyl phthalate	1.479	17  1.49678	0.005	1.2	20.0
82	2,6-Dinitrotoluene	0.308	63   0.34282	0.005	11.1	20.0
83	Acenaphthylene	1.698	81 1.69634	0.005	-0.1	20.0
85	3-Nitroaniline	0.324	62 0.32908	0.005	1.4	20.0
87	Acenaphthene	1.157	32 1.14599	0.005	-1.0	20.0
88	2,4-Dinitrophenol	1	12 100	0.050	-12.5	20.0
89	4-Nitrophenol	0.169	55 0.19360	0.050	14.2	20.0
90	Dibenzofuran	1.870	84  1.85807	0.005	-0.7	20.0
92	2,4-Dinitrotoluene	0.462	90  0.50589	0.005	9.3	20.0
97	Diethyl phthalate	1.492	67 1.51336	0.005	1.4	20.0
98	Fluorene	1.578	77 1.56349	0.005	-1.0	20.0
99	4-Chlorophenyl phenyl ether	0.696	70 0.69538	0.005	-0.2	20.0
102	4-Nitroaniline	0.389	68 0.43073	0.005	10.5	20.0
103	4,6-Dinitro-2-methylphenol	1	10  100	0.005	-9.9	20.0
105	N-Nitrosodiphenylamine	0.716	67  0.72008	0.005	0.5	20.0
106	1,2-Diphenylhydrazine	1.757	80  1.69800	0.005	-3.4	20.0
113	4-Bromophenyl phenyl ether	0.217	56 0.22085	0.005	1.5	20.0
115	Hexachlorobenzene	0.261	92 0.26392	0.005	0.8	20.0
117	Pentachlorophenol	1	11  100	0.005	-11.1	20.0
121	Phenanthrene	1.227	55 1.20752	0.005	-1.6	20.0
124	Anthracene	1.179	37 1.17896	0.005	-0.0	20.0
125	Carbazole	1.132	42 1.13605	0.005	0.3	20.0
127	Di-n-butyl phthalate	1.423	75  1.43609	0.005	0.9	20.0
132	Fluoranthene	1.308	92   1.35668	0.005	3.6	20.0
133	Benzidine	0.765	14 0.68120	0.005	-11.0	20.0
134	Pyrene	1.376	1.41479	0.005	2.8	20.0
142	Butyl benzyl phthalate	0.601	0.61450	0.005	2.2	20.0
144	3,3'-Dichlorobenzidine	0.397	40 0.44475	0.005	11.9	20.0
145	Benz(a)anthracene	1.166	20 1.20704	0.005	3.5	20.0
148	Chrysene	1.166	16 1.18311	0.005	1.5	20.0
149	Bis(2-Ethylhexyl)phthalate	0.836	69  0.86220	0.005	3.0	20.0
151	Di-n-octyl phthalate	1.952	24 2.05345	0.005	5.2	20.0
152	Benzo(b)fluoranthene	1.602	62 1.66298	0.005	3.8	20.0
		Ĭ			1	

SPL

#### CONTINUING CALIBRATION COMPOUNDS

Instrument ID: A.i Injection Date: 20-MAY-2003 11:09

Init. Cal. Date(s): 14-MAY-2003 16-MAY-2003 Lab File ID: A140CC1.D

01:11

Analysis Type: Init. Cal. Times: 11:58
Lab Sample ID: CCV CCV-100 Quant Type: ISTD Method: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

1					MIN		MAX
1	COM	POUND	RRF	RF100	RRF	%D	%D
=							
1	154	Benzo(k)fluoranthene	1.67765	1.65687	0.005	-1.2	20.0
	156	Benzo(a)pyrene	1.45836	1.51044	0.005	3.6	20.0
į.	160	Indeno(1,2,3-cd)pyrene	1.37352	1.46619	0.005	6.7	20.0
Į.	161	Dibenz(a,h)anthracene	1.44883	1.55321	0.005	7.2	20.0
1	162	Benzo(g,h,i)perylene	1.47678	1.52591	0.005	3.3	20.0
1\$	8	2-Fluorophenol	1.33036	1.43212	0.005	7.6	20.0
\$	15	Phenol-d5	2.00052	2.06301	0.005	3.1	20.0
\$	20	2-Chlorophenol-d4	1.36168	1.38515	0.005	1.7	20.0
15	26	1,2-Dichlorobenzene-d4	1.03648	1.01769	0.005	-1.8	20.0
15	39	Nitrobenzene-d5	2.20311	2.16358	0.005	-1.8	20.0
1\$	72	2-Fluorobiphenyl	1.61858	1.59804	0.005	-1.3	20.0
\$	107	2,4,6-Tribromophenol	0.11662	0.12370	0.005	6.1	20.0
\$	136	4-Terphenyl-d14	1.00457	0.99839	0.005	-0.6	20.0
-							

Page 3

Data File: \\LAFTGT1\ee\chem\A.i\A030520.b\A140CC1.D

Report Date: 07-Jul-2003 08:58

#### SPL

# INTERNAL STANDARD COMPOUNDS AREA AND RT SUMMARY

Instrument ID: A.i Lab File ID: A140CC1.D Calibration Date: 20-MAY-2003

Calibration Time: 11:58

Lab Smp Id: CCV CCV-100

Level:

Analysis Type: SV Quant Type: ISTD

Sample Type:

Operator: 1mk

Method File: \\LAFTGT1\ee\chem\A.i\A030520.b\ABNAW2.m

Misc Info: 8270 W ALL

		AREA	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
=======================================	========	========	========	========	======
23 1,4-Dichlorobenze	90983	45492	181966	105197	15.62
54 Naphthalene-d8	381902	190951	763804	437603	14.59
86 Acenaphthene-d10	240535	120268	481070	273232	13.59
120 Phenanthrene-d10	463864	231932	927728	544898	17.47
147 Chrysene-d12	546944	273472	1093888	609065	11.36
157 Perylene-d12	392379	196190	784758	446539	13.80

		RT I	LIMIT		
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
	========	========	=======	=======	======
23 1,4-Dichlorobenze	7.78	7.28	8.28	7.79	0.11
54 Naphthalene-d8	9.98	9.48	10.48	9.99	0.08
86 Acenaphthene-d10	13.07	12.57	13.57	13.08	0.06
120 Phenanthrene-d10	15.63	15.13	16.13	15.64	0.05
147 Chrysene-dl2	22.13	21.63	22.63	22.15	0.09
157 Perylene-d12	28.03	27.53	28.53	28.04	0.03

AREA UPPER LIMIT = +100% of internal standard area. AREA LOWER LIMIT = -50% of internal standard area.

# 8 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab File ID (Standard):

A140CC1.D

Date Analyzed:

5/20/03

Instrument ID:

Α

Time Analyzed:

11:09

GC Column:

ID:

(mm)

	IS1		IS2		IS3		IS4	
	AREA#	RT #	AREA#	RT #	AREA#	RT #	AREA#	RT #
12 HOUR STD	105197	7.780	437603	9.990	273232	13.080	544898	15.630
UPPER LIMIT	210394	8.280	875206	10.490	546464	13.580	1089796	16.130
LOWER LIMIT	52598	7.280	218801	9.490	136616	12.580	272449	15.130
SAMPLE								
NO.								
MB-16618	75740	7.780	292302	9.980	177327	13.060	348116	15.620
LCS-16618	83653	7.780	325232	9.980	198985	13.060	392493	15.620
16-E-1003-T1-A	77662	7.780	318194	9.980	186054	13.060	376095	15.620
16-E-1003-T1-AMS	74252	7.780	302359	9.980	182331	13.060	361484	15.620
16-E-1003-T1-AMSD	77427	7.780	308512	9.980	186096	13.060	363460	15.620

IS1 = 1,4-Dichlorobenzene-d4

IS2 = Naphthalene-d8

IS3 = Acenaphthene-d10

IS4 = Phenanthrene-d10

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.

^{*} Values outside of QC limits.

# 8 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab File ID (Standard):

A140CC1.D

Date Analyzed:

5/20/03

Instrument ID:

A

Time Analyzed:

11:09

GC Column:

ID:

(mm)

	IS5 AREA#	RT #	IS6 AREA#	RT #	
12 HOUR STD	609065	22.150	446539	28.040	
UPPER LIMIT	1218130	22.650	893078	28.540	
LOWER LIMIT	304532	21.650	223269	27.540	
SAMPLE					
NO.					
MB-16618	421857	22.120	318268	28.030	
LCS-16618	476595	22.120	355082	28.030	
16-E-1003-T1-A	438243	22.120	57103	28.030	
16-E-1003-T1-AMS	425840	22.120	209176	28.020	1
16-E-1003-T1-AMSD	441537	22.120	322719	28.030	1

IS5 = Chrysene-d12

IS6 = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.

^{*} Values outside of QC limits.

# ORGANICS SAMPLE & STANDARD PREP LOGS SEMIVOLATILE - TCLP

# SPL, Inc.

PREP BATCH REPORT

Prep Batch ID: 16618

Prep Code:

PR3510_TCLP_8270

Techician:

**Conrad Meaux** 

Page: 1 of 1

Prep Start Date: 5/16/03 3:40:53 PM

Prep End Date: 5/19/03 12:40:00 PM

Sample ID	Matrix	pН	wt (Kg)	Ini vol (mL)	Sol Added	Spk Added	Sol Recov	Fin Vol (mL)	factor	SDG
03050225-15D	Soil		0	100	0		0	1	0.01	
The prep H	oldTime was ex	ceeded by 6	days.							
03050225-15DMS	Soil		0	100	0		0	1	0.01	
The Prep H	lold Time was e	xceeded by 6	days.							
03050225-15DMSD	Soil		0	100	0		0	1	0.01	
The Prep H	lold Time was e	xceeded by 6	days.							
LCS-16618			0	100	0		0	1	0.01	
MB-16618			0	100	0		0	1	0.01	

# **Extraction Log Worksheet**

Ext. Method: 3576C	MATR						RACTION		$\neg$	CONCENTRATION							
Prep Code: A 3500 (TUAS)					ınnel		Analyst:		Wa	ter Bath		emp:			Analyst:	17	
Omega Prep: 16618	Solid				ation												
JI Date: 7135m1			W.C						T	urbovap	O T	emp:		Psi:	Date: 6 9	103	
Room Temp: 70 °	Other	0		(	Other	0	Time:	1540							Time: 124	5	
Room Humid: 46%		_				1				Other	0					_	
Ext. Solvents: DCM	0	C	492	4		E	xch. Solve	nts:	Hexane	0	7		BULS	urr. Conc: 5/7	ug/mL 95030 -011	4-05	
Acetone	0					]		Ac	etonitrile	0			LCS/	MS Conc: 8/13	ug/mL 95020 -010	5-17	BUSI
Ether						]	Acid/B	ase:	H ₂ SO ₄	0 02	0.44-000	2-18	1	:	ug/mL		, , ,
<u> </u>	0								NaOH	9 020	44-00002	-19		Na ₂ SO ₄ :	02002 000	27-	
	vol (mL	.)			pН		surrogate	verify	spike	verify	Final					$\top$	
SPL Sample ID	wt. (g)	0	Н	ini	Α	В	vol (mL)		vol (mL)			AC	MC	Co	mments	EM	
BLK	100		NA	-	0	14	1.0	100	NA	1 10	1.0					0	i .
LES	100		1	5	0	14	1.0	V-	1.0	1	1.0	_				10	1
03050225 -15045	100			5	0	R	I.U		14		1.0	_				lŏ	1
0225 -15 DASD	100		$\vdash$	5	0	14	1.0		NA		1.0	_				ŏ	1
0225-15D	100		$\vdash$	2	δ	14	(3		1		1.0	_				ŏ	1
	-			,		-	10					-			7	10	l
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7																0	1
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	- Ş					22	15									0	1
									1			_	-			0	1
						10										0	1
												_				0	1
										1.7		_				0	1
1									5.0							0	1

H= Homogenization by SOP # SPL/CE/GEN-P18 (current rev.)

EM= Emulsion in water sample during extraction

Review and Transfer.

AC= Sulfuric acid cleanup for PCB extraction

MC= Mercury cleanup for sulfur removal from PCB extracts

# TCLP EXTRACTION LOG

3	Comments	Complete Date/ Time/ Analyst	pH after Ext	Date/ Time Off	Room Temp Off	Date/ Time On	Room Temp On	Ext Fluid Vol (ml)	Sample Amt (g)	xt Fluid Lot#	Ext Fluid #	pH after HCI	Ini pH	*Matrix	% Sol	% Liq	Device #	SPL Sample ID	Date/ Time/ Analyst	
						5/8/03	224	2000	100			2-10	6.29	S	100		1	03050180-238	103	
$\dashv$							-				+	-	2-40		100		Z	BIK	o.: 3D	
	2	3/11/2		~ /:: /a?		5/10/03		V2-11-7-CS												
-	T13051	3/11/03	4,88	700	23.1	3/10/03	21.1	2000	0	05-025-22	1	4	4.88		0	100	1	BLK	110/03	
	PB1311-19/E	16:00	5.09	14:00	+	-	+	1	100	1	1	2.67	95		100	0	2	030 50208-013	1:00	
_	1	-	5.05		+		+	+	100		4		3,47	5	100	0	3	03050289-01A		
4	1 1		3.05		+		$\perp$	-	100			2.27	8.35	_	100	0	10	03050356-PA		
_	<u></u>		4.97		+		$\perp$		100		1	2.21	6.06		100	0	14	03050447-01A		
	RE-extrect		5.45				$\perp$	$\perp$	100	ı	1	2.17	8,25	9	100	0	16	0305 0180-23 B		
	T13052		4,38		+		+		0	05-025-12	1		4.88	L	0	100	1	BLK	110103	
170	PRI311_827	_d_	4.47		7	-	1	1	100	1	(	2.21	6.06	5.	106	0	14	03050447_0IA	21:00	
]	T13251	5/13/03	4.88	5/13/03	22.3	5/12/03	21.1	2006	0	105-015-72	(	/	4.88	e	0	100	5	BLK	1/12/03	
= #	PR1311-ME	14:30	6.00	9:00	22.3	@15:15	21.1	2000	100	1	1	2.11	8.40	5	100	0	ı	030401153013		
	T135 511		4.88	5/16/03	25.0	5/15/03	21,0	2000	0	05_025_22	1		4.66	l	0	100	2	BLK	119/03	
0 1	PRI311-ME -8270	1650	5.05	1600	1	00:15			100	1	(	1.97	7,04	$\overline{}$	7.3	79.8	16	03050225-150	00:10	

2/200

# ZHE EXTRACTION LOG

Tumbler RPM: 31

Department: B = BTEX V = Volatiles

Matrix: S = Solid

L = Liquid

P = Pure

M = Multiphase

Analyst Date/ Time	Sample ID#	Zhe Device #	Matrix	% Solid	Sample Weight (g)	Fluid Volume (mL)	Tumbler Start Time	Starting Room Temp. (C°)	Initial (psi)	Final (ps	Ending Room Temp. (C°)	(mL)	Department	Ext Fluid Lot#	Date/ Time Complete	
5/12/03	BLK	17	1	0	0	500	15:15	21.1	10	10	22.3		B	PIH2G		213/325
W 15:00	03050044-1613	5	5	100	25.0	500	15:15	21,1	10	10	22.3	126	13	1	14:30	PR1312-GC
-1.1.		-		_			1-10-	22.			21 -		_	. 27/2		# 16456
5/13/03	BLK	8	1	0	0	500	17:00	23.0	N	10	21.0	126	B			213351
£ 16.35	03050294-01A		-		25-0	<del>                                     </del>	-	-	10	10			BV		12:00	PR1312-M
	03050294-02A			100	-	-		<del>                                     </del>	10	10		<del>                                     </del>	V			#16503
	03050294-04A	17	5	100		1	1	1	10	10	1	1	V	1	1	
5/15/03	BLK	5	1	0	0	500	5/15/03	21.6	10	10	25.0	800 (20	5	02105-023-22	5/15/53	Z135 M
9 00:10	03050225-150	18	M	7.3	25.0	500	e 00:15	21.0	10	10	1	8010	V	(	1815	PR1311-MS
	3									000000						#16547
5/15/03	MBLK	5	Q	0	0	500	5/15/03	22.8	10	(0	21.0	120	B	02105-025-04	6/16/09	73/355
1700	03050639-09A	1	0	100	25.0	500	1800	1	10	10		120	B	1	1535	PR/3/1-8
	03050558 - 05A		5	100	25.0	500			10	10		120	B			# 1658
	03050614 - 01A	4	5	100	25.0	500	1	1	10	10	1	120	B	1	4	
5/10/03	MBLK	_					filter	el Oct	10			80	L	02105-023-22	5/16/09	21366
1915	03050608-01A	5	2	0		-	Etered	lis 0	10			80	L	/-	1930	PR1311-14
								0			,					16630

# ORGANICS RUN LOGS

SEMIVOLATILE - TCLP

### SAMPLE INFORMATION SUMMARY

BATCH: \\LAFTGT1\ee\chem\A.i\A030514.b

Data File	Injectio	on Date	Sampl	le Type	Dil Factor Inst	ID Method	Method	Batch
A134DF1.D	14-MAY-2	2003 09:35	DFTPI	P	1.00 A	dftpp.m	A030514	.b
A134IC7.D		2003 11:58	Cal		1.00 A	ABNAW2.m	A030514	
A134IC1.D	14-MAY-2	2003 12:47	Cal	Level 1	1.00 A	ABNAW2.m	A030514	.b
A134IC2.D		2003 13:35	Cal I		1.00 A	ABNAW2.m	A030514	
A134IC3.D	14-MAY-2	2003 14:23	Cal I		1.00 A	ABNAW2.m	A030514	.b
A134IC4.D		2003 15:12	Cal I		1.00 A	ABNAW2.m	A030514	
A134IC5.D	14-MAY-2	2003 16:01	Cal I		1.00 A	ABNAW2.m	A030514	
A134IC6.D	14-MAY-2	2003 16:49	Cal I	Level 7	1.00 A	ABNAW2.m	A030514	
A134IC8.D	14-MAY-2	2003 17:38	Cal I	Level 9	1.00 A	ABNAW2.m	A030514	
A134IC9.D	14-MAY-2	2003 18:26	Cal I	Level 10	1.00 A	ABNAW2.m	A030514	
A134IC10.D	14-MAY-2	2003 19:14	Cal I	Level 11	1.00 A	ABNAW2.m	A030514	.b
Data File	Matrix	Fraction	Lab Sa	ample ID	Lab Prep Bat	ch Client Samp	ole ID Client	Sample Group
+		-+	-+			+		
A134DF1.D	Liquid	sv	TUNE I	FTPP	Std ID#1088-	97-03	1	3
A134IC7.D	NONE	sv	ICAL	ICAL-100	Std ID#1088-	115-08	ĺ.	
A134IC1.D	NONE	sv	ICAL	ICAL-1	Std ID#1088-	115-01	ĺ	i i
A134IC2.D	NONE	sv	ICAL	ICAL-5	Std ID#1088-	115-03	į.	
A134IC3.D	NONE	sv	ICAL	ICAL-10	Std ID#1088-	115-04	ř	- 1
A134IC4.D	NONE	sv	ICAL	ICAL-20	Std ID#1088-	115-05	Î	i i
A134IC5.D	NONE	sv	ICAL	ICAL-50	Std ID#1088-	115-06	Ď	
A134IC6.D	NONE	sv	ICAL	ICAL-80	Std ID#1088-	115-07	i	
A134IC8.D	NONE	sv	ICAL	ICAL-120	Std ID#1088-	115-09	i	1
A134IC9.D	NONE	sv	ICAL	ICAL-150	Std ID#1088-	115-10	Ĺ	1
A134IC10.D	NONE	sv	ICAL	ICAL-200	Std ID#1088-	115-11	i	Ä
Data File	Compound	Sublist	Spike	List File	Sample Ref	# QC Group Ref # I	nit Cal Ref # Bat	ch Ref #
A134DF1.D	all.sub		+		+	704	252220	1101004
A134IC7.D	tclp.sub		Lmaha	inle anle	3173		367179	1191994
A134IC1.D				pk.spk	3173		3173985	200334
	tclp.sub		100000000000000000000000000000000000000	pk.spk	3173	생겨부팅	3173985	200334
A134IC2.D A134IC3.D	tclp.sub		503	pk.spk	3173		3173985	200334
	tclp.sub			pk.spk	3173	[BRANE]   BRANES   BR	3173985	200334
A134IC4.D	tclp.sub		100000000000000000000000000000000000000	pk.spk	3173	19.19.19.19 19.19.19.19.19.19.19.19.19.19.19.19.19.1	3173985	200334
A134IC5.D	tclp.sub		7	pk.spk	3173		3173985	200334
Al34IC6.D	tclp.sub		wpans	pk.spk	3173	957 3173785	3173985	200334

<del>+</del>-------

3173959

3173960

3173952

3173785

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Page 1

wpahspk.spk

wpahspk.spk

wpahspk.spk

tclp.sub

tclp.sub

tclp.sub

A134IC8.D

A134IC9.D

A134IC10.D

200334

200334

200334

### SAMPLE INFORMATION SUMMARY

BATCH: \\LAFTGT1\ee\chem\A.i\A030520.b

Data File	Injectio	on Date	Sample Type	Dil Factor Inst ID	Method	Method	Batch
A140DF1.D	20-MAY-2	2003 10:29	DFTPP	1.00 A	dftpp.m	A030520	).b
A140DF2.D	20-MAY-2	2003 10:46	DFTPP	1.00 A	dftpp.m	A030520	d.b
A140CC1.D	20-MAY-2	2003 11:09	Continuing Cal	1.00   A	ABNAW2.m	A030520	d. b
A140B01.D	20-MAY-2	2003 12:47	Unknown	1.00   A	ABNAW2.m	A030520	d.b
A140TL1.D	20-MAY-2	2003 13:36	LCS	1.00 A	ABNAW2.m	A030520	.b
A140S01.D	20-MAY-2	2003 14:25	Unknown	1.00   A	ABNAW2.m	A030520	d.b
A140K01.D	20-MAY-2	2003 15:14	MS	1.00   A	ABNAW2.m	A030520	).b
A140KD1.D	20-MAY-2	2003 16:03	MSD	1.00 A	ABNAW2.m	A030520	),b
A140TST1.D	20-MAY-2	2003 16:52	LCS	1.00 A	ABNAW2.m	A030520	).b
A140B02.D	20-MAY-2	2003 18:29	Unknown	1.00   A	ABNAW2.m	A030520	),b
A140TL2.D	20-MAY-2	2003 19:17	LCS	1.00 A	ABNAW2.m	A030520	).b
A140TD2.D	20-MAY-2	2003 20:05	LCS	1.00 A	ABNAW2.m	A030520	
A140S02.D	20-MAY-2	2003 20:53	Unknown	1.00 A	ABNAW2.m	A030520	
A140S03.D		2003 21:40	Unknown	1.00 A	ABNAW2.m	A030520	
	+		.++		-+		
Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client	Sample Group
Al40DF1.D	LIQUID	sv	TUNE DFTPP	Std ID#1088-97-03		1	
A140DF2.D	LIQUID	sv	TUNE DFTPP	std ID#1088-97-03	ř	ŕ	
A140CC1.D	NONE	sv	CCV CCV-100	Std ID#1088-115-14	Î	ì	
A140B01.D	LIQUID	sv	MBLK MB-16618	16618	ì	i	
A140TL1.D	LIQUID	sv	LCS LCS-16618	16618			
A140S01.D	LIQUID	sv	SAMP 03050225-15D	16618	i	i	
A140K01.D	LIQUID	sv	MS 03050225-15DMS	16618	i		
A140KD1.D	LIQUID	sv	MSD 03050225-15DMS		ì	- 1	
A140TST1.D	LIQUID	Isv	NEW BNA SURROGATE	20 (10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ì	1	
A140B02.D	SOLID	Isv	MBLK MB-16655	16655	i i	ii ii	
A140TL2.D	SOLID	Isv	LCS LCS-16655	16655		1	
A140TD2.D	SOLID	sv	LCSD LCSD-16655	16655		E .	
A140S02.D	SOLID	sv	SAMP 03050246-14A	16655		i i	
A140S03.D	SOLID	sv	SAMP 03050246-15A	16655	ř.	i	
		-+	+	*	*************	+	*********
Data File	Compound +	Sublist	Spike List File	Sample Ref # QC (	Group Ref # Init Ca	al Ref # Bat	ch Ref #
A140DF1.D	all.sub		L	3174709	3174711	367179	1191994
A140DF2.D	all.sub			3174710	3174713	367179	1191994
A140CC1.D	ccc1.sub		tclps.spk	3174789	3174713	3173985	200334
A140B01.D	tclp.sub		tclps.spk	3174801	3174713	3173985	200334
A140TL1.D	tclp.sub		tclps.spk	3174805	3174713	3173985	200334
A140S01.D	tclp.sub		tclps.spk	3174804	3174713	3173985	200334
A140K01.D	tclp.sub		tclps.spk	3174802	3174713	3173985	200334
A140KD1.D	tclp.sub		tclps.spk	3174803	3174713	3173985	200334
A140TST1.D	8270.sub		wbnaspk.spk	3174807	3174713	3173985	200334
A140B02.D	M8270.su		sbnams.spk	3174814	3174713	3173985	200334
A140TL2.D	M8270.su		sbnalcs.spk	3174819	3174713	3173985	200334
A140TD2.D	M8270.su		sbnalcs.spk	3174818	3174713	3173985	200334
						C. C. C. C. C. C. C. C.	200227
A140S02.D	M8270.su	b	sbnams.spk	3174815	3174713	3173985	200334

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# ORGANICS CLP-LIKE FORM 1'S & RAW DATA HERBICIDES - TCLP

### CLIENT SAMPLE ID

0.01

U

16-E-1003-T1-A Lab Name: SPL, Inc. Lab Code: SPLLAF SDG No.: 03050225 SOIL Lab Sample ID: Matrix: 03050225-15D Lab File ID: Sample wt/vol: 100.0 (g/mL) G MN/ME24614.RAW" Date Collected: 5/3/03 LOW Level: Date Extracted: 5/20/03 % Moisture: Date Analyzed: 5/25/03 GC Column: RTX5-BTEX/TPHD/P ID: .53 (mm) Dilution Factor: 1.0 Extract Volume: 10000 (ul) CONCENTRATION UNITS: mg/L CAS NO. COMPOUND (mg/L or ug/Kg) Q mg/L 93-72-1 2,4,5-TP (Silvex) U 0.001

94-75-7

2,4-D

### CLIENT SAMPLE ID

0.062

16-E-1003-T1-AMS Lab Name: SPL, Inc. Lab Code: SPLLAF SDG No .: 03050225 Matrix: SOIL Lab Sample ID: 03050225-15DMS Sample wt/vol: 100.0 (g/mL) G Lab File ID: MN\ME24615.RAW" Date Collected: Level: LOW 5/3/03 Date Extracted: % Moisture: 5/20/03 Date Analyzed: GC Column: 5/25/03 RTX5-BTEX/TPHD/P ID: (mm) Dilution Factor: Extract Volume: 10000 1.0 (ul) CONCENTRATION UNITS: mg/L CAS NO. COMPOUND (mg/L or ug/Kg) mg/L Q 93-72-1 2,4,5-TP (Silvex) 0.0068

94-75-7

2,4-D

2,4,5-TP (Silvex)

2,4-D

### CLIENT SAMPLE ID

mg/L

0.0057

0.055

Q

16-E-1003-T1-AMSD Lab Name: SPL, Inc. Lab Code: SPLLAF SDG No.: 03050225 Matrix: SOIL Lab Sample ID: 03050225-15DMSD Sample wt/vol: 100.0 (g/mL) G Lab File ID: MNWE24616.RAW" Date Collected: Level: LOW 5/3/03 Date Extracted: % Moisture: 5/20/03 Date Analyzed: GC Column: RTX5-BTEX/TPHD/P ID: 5/25/03 .53 (mm) Dilution Factor: Extract Volume: 10000 (ul) 1.0 CONCENTRATION UNITS: mg/L CAS NO. COMPOUND

(mg/L or ug/Kg)

93-72-1

94-75-7

### CLIENT SAMPLE ID

MB-16703 SPL, Inc. Lab Name: SDG No.: 03050225 Lab Code: SPLLAF Lab Sample ID: MB-16703 LEACHATE Matrix: MNWE24612.RAW" Lab File ID: ML Sample wt/vol: 100.0 (g/mL) Date Collected: LOW Level: Date Extracted: 5/20/03 % Moisture: 5/25/03 Date Analyzed: RTX5-BTEX/TPHD/P ID: .53 GC Column: (mm) Dilution Factor: 1.0 Extract Volume: 10000 (ul) CONCENTRATION UNITS: mg/L

 CAS NO.
 COMPOUND
 (mg/L or ug/Kg)
 mg/L
 Q

 93-72-1
 2,4,5-TP (Silvex)
 0.001
 U

 94-75-7
 2,4-D
 0.01
 U

# ORGANICS QUALITY CONTROL RAW DATA HERBICIDES - TCLP

2F

## Surrogate Recovery - Sample Data TCLP Chlorinated Herbicides

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LEVEL:

LOW

GC Column(1):

RTX5-BT ID:

.53

(mm) GC Column(2):

ID:

(mm)

EPA SAMPLE NO.	% REC1 (DCA) #	тот
01 16-E-1003-T1-A	63	0
02 16-E-1003-T1-AMS	74	0
03 16-E-1003-T1-AMSD	68	0

QC Limits

% REC 1 (DCA)

= DCAA

40-130

%

* Values outside of contract required QC limits

# Column to be used to flag recovery values

07/23/03 13:31

FORM II

2E

### Surrogate Recovery - Lab QC Data TCLP Chlorinated Herbicides

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LEVEL:

LOW

GC Column(1):

0. 20 ...

RTX5-BT ID: .53

(mm)

GC Column(2):

ID:

(mm)

EPA SAMPLE NO.	% REC1 (DCA) #	TOT
01 MB-16703	67	0
02 LCS-16703	65	0

QC Limits

% REC 1 (DCA)

= DCAA

40-130

%

* Values outside of contract required QC limits

# Column to be used to flag recovery values

07/23/03 13:31

FORM II

## 3 SPIKE/SPIKE DUPLICATE RECOVERY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Matrix Spike - Sample No.:

16-E-1003-T1-A

Analysis Date

5/25/03

Level:(low/med)

LOW

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	SPIKE CONCENTRATION (mg/L)	SPIKE % REC#	QC. LIMITS REC.
2,4,5-TP (Silvex)	0.00600	0	0.0068	113	22-175
2,4-D	0.0600	0	0.062	103	20-175

COMPOUND	SPIKE ADDED (mg/L)	SPIKE DUP CONCENTRATION (mg/L)	SPK DUP % REC #	% RPD#	QC L	IMITS REC.
2,4,5-TP (Silvex)	0.00600	0.0057	95	17	30	22-175
2,4-D	0.0600	0.055	92	11	30	20-175

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of

2 outside limits

Spike Recovery:

0 out of

outside limits

07/23/03 13:31

FORM III

### 3A SPIKE RECOVERY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID

LCS-16703

Level:(low/med)

LOW

Analysis Date

05/25/03

File ID

MN\ME24613.RAW"

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	SPIKE CONCENTRATION (mg/L)	SPIKE % REC#	QC. LIMITS REC.
2,4,5-TP (Silvex)	0.00600	0	0.0061	102	22-175
2.4-D	0.0600	0	0.056	93	20-175

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery:

0 out of

2 outside limits

07/23/03 13:31

FORM III

2,4,5-TP (Silvex)

2,4-D

93-72-1

94-75-7

07/23/03 13:29

### CLIENT SAMPLE ID

0.0061

0.056

LCS-16703 Lab Name: SPL, Inc. SDG No.: 03050225 Lab Code: SPLLAF LCS-16703 Lab Sample ID: LEACHATE Matrix: MN\ME24613.RAW" ML Lab File ID: (g/mL) Sample wt/vol: 100.0 Date Collected: LOW Level: 5/20/03 Date Extracted: % Moisture: Date Analyzed: 5/25/03 RTX5-BTEX/TPHD/P ID: .53 (mm) GC Column: Dilution Factor: 1.0 Extract Volume: 10000 (ul) CONCENTRATION UNITS: mg/L Q (mg/L or ug/Kg) mg/L CAS NO. COMPOUND

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-16703

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

MB-16703

Lab File ID:

MN\ME24612.RAW"

.53

Date Extracted:

5/20/03

Date Analyzed:

5/25/03

Time Analyzed:

GC Column:

RTX5-BTE ID:

(mm)

0:53

Heated Purge: (Y/N)

Ν

Instrument ID:

PEST

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	LCS-16703	LCS-16703	MN\ME24613.RAW"	5/25/03	1:33
02	16-E-1003-T1-A	03050225-15D	MN\ME24614.RAW"	5/25/03	2:14
03	16-E-1003-T1-AMS	03050225-15DMS	MN/ME24615.RAW"	5/25/03	2:54
04	16-E-1003-T1-AMSD	03050225-15DMSD	MN\ME24616.RAW"	5/25/03	3:34

# ORGANICS INITIAL CALIBRATION RAW DATA HERBICIDES - TCLP

### Form 6 Initial Calibration Data

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID:

PEST

Calibration Start:

05/24/03 18:50

Calibration Finish:

05/24/03 22:52

LAB FILE ID: HERB10=	SVOL\HPMN\ME24	603.RAW				HERB125	= SVC	DL\HPMN\ME24608.RAW			
HERB20=	SVOL\HPMN\ME24	604.RAW				HERB150	150= SVOL\HPMN\ME24609.RAW				
HERB50= SVOL\HPMN\ME24605.RAW											
HERB80=	SVOL\HPMN\ME24	606.RAW									
HERB100=	SVOL\HPMN\ME24	607.RAW									
COMPOUND	HERB10	HERB20	HERB50	HERB80	HERB100	HERB125	HERB150		RRF	% RSD	R²
COIIII COILE										7 50000	
	6344.73	38 7172.6316	7730.7368	7983.8158	7322.5263	7901.6421	7289.5438	6	7392.23	7.58222	
2,4,5-TP (Silvex) 2,4-D	200 TO 100  7172.6316 33 2327.5674	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		A THE SECTION		7289.5438 1585.9687		7392.23 1912.86	14.3597	0.9913	

System Performance Check Compounds
07/23/03 13:31

^{*} Continuing Calibration Check

# ORGANICS CONTINUING CALIBRATION RAW DATA HERBICIDES - TCLP

### 7 CONTINUING CALIBRATION CHECK

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID:

PEST

Calibration Date:

5/25/03

Time:

12:13 AM

Lab File ID:

MN\ME24611.RAW"

Init. Calib. Dates:

5/24/03

5/24/03

Init. Calib. Times:

18:50

22:52

GC Column:

RTX5-BTEX/TPHD/PCB

ID: <u>.53</u>

.53 (mm)

COMPOUND	CURVE TYPE	AVG. RF/RRF	STD. RF/RRF	MIN RRF	%D	MAX %D	THEO	RCVR CONC	%D²	MAX %D²
2,4,5-TP (Silvex)	AVRG	7392.23333	7832.211		5.952	15.0				
2,4-D	10RDR						470	510	8.5	
DCAA	10RDR						50	55	10.0	

^{*} Continuing Calibration Check

^{**} System Performance Check Compounds

### 7 CONTINUING CALIBRATION CHECK

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID:

PEST

Calibration Date:

5/25/03

Time:

7:35 AM

Lab File ID:

MN\ME24622.RAW"

Init. Calib. Dates:

5/24/03

5/24/03

Init. Calib. Times:

18:50

22:52

GC Column:

RTX5-BTEX/TPHD/PCB

ID: .53

(mm)

COMPOUND	CURVE TYPE	AVG. RF/RRF	STD. RF/RRF	MIN RRF	%D	MAX %D	THEO	RCVR CONC	%D²	MAX %D²
2,4,5-TP (Silvex)	AVRG	7392.23333	7646.421		3.439	15.0				
2,4-D	10RDR		100000000000000000000000000000000000000				470	470	0.0	
DCAA	10RDR						50	52	4.0	

^{*} Continuing Calibration Check

^{**} System Performance Check Compounds

# ORGANICS ANALYTICAL SEQUENCE

HERBICIDES - TCLP

### 8D ANALYTICAL SEQUENCE

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

RunID:

PEST_030525A

GC Column:

RTX5-BTE ID: .53

(mm)

Init. Calib. Date(s):

5/24/03

5/24/03

Instrument ID:

PEST

## THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES ,BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	# R1	- #	Sequence #	RT Ref. Seq #
01 HERB50	HERB50	5/25/03	0:13		3		714102	714102
02 MB-16703	MB-16703	5/25/03	0:53				714103	714102
03 LCS-16703	LCS-16703	5/25/03	1:33		1		714104	714102
04 16-E-1003-T1-A	03050225-15D	5/25/03	2:14				714105	714102
05 16-E-1003-T1-AMS	03050225-15DM	5/25/03	2:54		1		714106	714102
06 16-E-1003-T1-AMSD	03050225-15DM	5/25/03	3:34				714107	714102
07 HERB50	HERB50	5/25/03	7:35				714125	0

QC LIMITS (± 0.00 MINUTES) (± 0.00 MINUTES)

# Column used to flag values outside QC limits with an asterisk.

FORM VIII PEST

^{**} Values outside of QC limits.

# ORGANICS SAMPLE & STANDARD PREP LOGS HERBICIDES - TCLP

# SPL

EXTRACTION LOG WORKSHEET

METHOD: 3510C	PREP CODE: PLASIU_TCLIST	EXTRACTION TECHN	NIQUE	:		SURROGATE CONC:	1041 MIL	LOT#: 95030-0102-19
EXT. DATE: 5-20-13	EXT. ANALYST: CLM	SEP FUNNEL	V	MATRIX:		MS CONC:	water inc	LOT #9020661-20
EXT. TIME: 08'SO	TIME ON LIQ-LIQ 1:	CONT. LIQ-LIQ	,	WATER	×	EXTRACTION SOLVENT:	- 1	LOT #:0 1033 - 0159-C
CONC. DATE: 5-23-03	TIME OFF LIQ-LIQ 1:	SONICATION		SOLID	T	EXTRACTION SOLVENT:		LOT#: 02044-00062-16
CONC. TIME: 1550	TIME ON LIQ-LIQ 2:	WASTE DILUTION		OIL		EXCHANGE SOLVENT:		LOT#:
CONC. ANALYST: 1, JE /	TIME OFF LIQ-LIQ 2:	OTHER:		OTHER:		ESTERIFICATION AGENT:	NULSU4	LOT#142- 80005-47

	VOLUME		pН		SURROGATE	VF			SELW SEREN	FINAL	-	SAMPLE	CLEANUP	
SPL SAMPLE ID	VOLUME/ WEIGHT	INI	А	BN	VOL (mL)	INI	MATRIX SPIKE VOL (ML)	VF INI	COMMENTS	VOL (mL)	ACID	TBA	FLOR	GPC
BLK	100	5	0	NA	1,0	9	NA	1	HT (35M)	10.0				
BLK LCS	100	وَدِ	0		1.0	1	1,0	7	# 16703	10.0				
03050225-15DMS	100	5	0		1,0		110	11,		10.0				
0225 15DMSD		5	0		1.0		1.0	U		10.0				
0225 750	(00	5	0	Ψ	100	4	NIA	M		10.0	-			
							1	-						
			-			-				E				
						-								
			-	_					2 G					
									Jeny 626					
			-			-			Hun 77%					
	A STATE OF COMMAN	distriction	Annua y	distant.	Marketter Central and Co	EV.	WORLD A COMP.	lates.	Hum Itte		100		Louis and the	Andrews
Total Records	A STATE OF		A Section		A STATE OF STREET			9,665			Carried States	A LESSON DE	NAME OF STREET	

### TCLP EXTRACTION – Form A Phase % Determination

Α	В	C	D	E	F	G	Н	1	J	K	L E
Formula							G - D				
Units		(g)	(g)	(g)	(9)	(g)	(g)	(g)	(g)	(g)	(g)
Sample ID#	II of Phases	Filter VM.	Container #1 Empty Wt.	Container #2 Empty Wt.	Container #3 Empty Wt.	Container #1 w/Sample	Initial Sample Wt.	Container #2 w/Liquid	Container #3 w/Oil	Filter w/Solld (wet Vit.)	Filter w/Solid (1* Dry Wt.)
e3550225-16A		1,54	204.37	121.66	12107	365,25				12.97	9.64
<del>3:050225-13</del> 1			991 W								
N3 65092-549	3	4.60	U53 91	945.47	473.14	3895 46	איוויר,ג	2982,6	312.83	<b>1</b> 54.14	19640
0305064-02	3	121	380.49	400.12	26.12	£29.79	44A. h	(867.66	51.18	29.88	nn
030507510M	3	1.50	294.24	396.03	26.30	1222.00	624.76	116.54	43.82	5.03	4.57
030506H-01A	3	1.53	39538	130.82	26.29	77801	392.63	430,60	45,14	25.31	23,29
3051147-01A	1	1.53	388.78	386.04	396,04	1076.83	688.05	1067.86	1068,86	4.36	1.77
03051162-01A	2		385.06	345,75	_	1668.76	1283.7	167243	/	590.27	529.9
03060191_014	2	1.21	386.38	384.96		1269.54	883.16	1213.71		37.72	2131

Comments:			
		W	
			a 20
	5		

- 15 -

## TCLP EXTRACTION – Form B Phase % Determination

M	N	0	P	Q	R	S	T	U	V	W	X	
						PHOTE	4-5	4P/S)	(Q/S) (S/U) x	(B/s) (T/U) x	(S/H) (U/H)	
	(L - M)/L x 100	K-M	M-C	I-E+0	J-F	7.8.7	JH-V	(P/S) (PAU) × 100	(S/U) x 100	(T/U) x 100	(U/H) x 100	
(g)	(g)	(g)	(g)	(g)	(g)	(9)	(g)	%	%	%	%	
Filter w/Soild (2 rd Dry WI)	% Difference (+/- 1.0%)	Liquid Lost to Drying	Final Solid Wt.	Final Liquid Wt.	Final Oil Wt.	Final Sample Wt.	Residue	Total % Solids	Total % Liquids	Total % Oils	% Recovery	Julian Date
9,64	0-											L.
196.43	٥	57.71	191.83	2094,84	339.69	2626.36	115.13	7.30	79.76	12.93	95.8.	M133 H
21.22	Ø	2.46	26.01	470.20 (467 VG)	15.06	(518.73						M155
4,31	Ø .	0.52	361	.769.47	17.52	790.0	24.76	C. 38	97.40	7.22	96.53	MJOH
23,29	Ø	2.02	21.76	301.20	18,85	341.81	50.82	6.37	55.1Z	5.51	\$7.06	MIYON
1.77	0	2.59	0.24	_	685.41	685.65	2.40	0.035	277	99.965	99.65	M1491
529.9	0	60.37	528.37	747.05		1275.42	2.28	41.43	58.57	_	99.35	M149)
71.31	8	15:91	20.6	844.66	-	B65.76	17.9	2.38	97.62		97.97	MISTN Traces
	ts:											oil.

- 16 -

# ORGANICS RUN LOGS

## **HERBICIDES - TCLP**

Turbochrom Sequence File : L:\DATA\TCHROM\SVOL\METHODS\PESVE16.SEQ Created by : LK on : 5/16/03 09:32 AM on : 5/16/03 05:16 PM Created by : LK Edited by : REB Description :

Number of Times Edited: 4

Sequence File Header Information:
Number of Rows : 62
Instrument Type : 760 / 900 Series Intelligent Interface
Injection Type : SINGLE

Row	Type	Sample Name	Sample Number	Sequence Sar Study Name	nple Descri Sample Amount	ptions - ISTD Amount	Channel A Sample Volume	Dil. Factor	Mult	Divisor	Addend	Norm. factor
1	Sample	PEST100	PRIMER	8081 W	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
2	Sample	DEGCK	DEGCK	8081 W	1.000	1.000	1,000	1.000	1.000	1.000	0.000	100.000
3	Sample	PEST100	ccv	8081 W	1.000	1.000	1.000	1.000	1,000	1.000	0.000	100.000
4	Sample	PESTSPIKE	PESTSPIKE	8081 W	1.000	1.000	1.000	1.000	1,000	1.000	0.000	100.000
5	Sample	PEST100	CCV	8081 S	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
6	Sample	MB-16515	MBLK	8081_S	1.000	1.000	1.000	1.000	0.333	1.000	0.000	100.000
7	Sample	LCS-16515	LCS	0001_S	1,000	1.000	1.000	1.000	0.333	1.000	0.000	100.000
8	Sample	LCSD-16515	LCSD	0001_S	1.000	1.000	1.000	1,000	0.333	1.000	0.000	100.000
9	Sample	PSP1KE-5/16/03	SPIKE	8081_S	1.000	1.000	1,000	1.000	0.333	1.000	0.000	100.000
10	Sample	03050246-01A	SAME	8081 S	1.000	1.000	1.000	1.000	0.333	1.000	0.000	100.000
11	Sample	03050246-02A	SAMP	9091_5	1.000	1.000	1.000	1.000	0.333	1.000	0.000	100.000
12	Sample	CCB	CCB	8081_S	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
13	Sample	03050246-03A	SAMP	8091_5	1.000	1.000	1.000	1.000	0.333	1.000	0.000	100.000
14	Sample	03050246-04A	SAMP	8081_S	1.000	1,000	1.000	1.000	0.333	1.000	0.000	100.000
15	Sample	03050246-05A	SAMP	8081_S	1.000	1.000	1.000	1.000	0.333	1.000	0.000	100.000
16	Sample	PEST100	CCV	8081_S	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
13	Sample	CCB	CCB	8081_S	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
18	Sample	03050246-06A	SAMP	8081_S	1.000	1.000	1.000	1.000	0.333	1.000	0.000	100.000
19	Sample	CCB	CCB	8081_S	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
20 21	Sample	03050246-07A	SAMP	8081_S	1.000	1,000	1.000	1.000	0,333	1.000	0.000	100.000
	Sample	03050246-08A	SAMP	8081_S	1.000	1.000	1.000	1.000	0,333	1.000	0.000	100.000
22 23	Sample	03050246-09A	SAMP	8081_5	1.000	1.000	1.000	1.000	0.333	1.000	0.000	100,000
24	Sample Sample	03050246-10A	SAMP	8081_S	1.000	1.000	1.000	1.000	0.333	1,000	0.000	100.000
	Sample	03050246-11A	SAMP	8091_5	1.000	1.000	1.000	1.000	0.333	1,000	0.000	100.000
25	Sample	03050246-12A	SAMP	8081_8	1,000	1.000	1.000	1,000	0.333	1,000	0.000	100.000
26	Sample	CCB	CCB	B081_S	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
27	Sample	PEST100	CCA	8081_S	1.000	1,000	1.000	1,000	1.000	1.000	0.000	100.000
28 29	Sample	MB-16614	MBLK	8081_W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
	Sample	LCS-16614	LCS	8081_W	1.000	1.000	1.000	1.000	0.100	1,000	0.000	100.000
30 31	Sample	03050225-15D	SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
32	Sample Sample	03050225-15DMS	SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
33	Sample Sample	03050225-15DMSD PEST100	SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
34	Sample		CCV	8081_W	1.000	1.000	1.000	1,000	1,000	1.000	0.000	100.000
35	Sample	HEX	HEX	9091_W	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
36	Sample		SAMP	9091_W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100,000
37	Sample		SAMP SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1,000	0.000	100.000
3.9	Sample			8081_W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
39	Sample		SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1.000		100.000
40	Sample		SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1.000		100.000
41	Sample		SAMP	6081_W	1.000	1.000	1,000	1.000	0.100	1,000	0.000	100.000
42	Sample		SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1,000	0.000	100.000
43	Sample		SAMP	9091_W	1.000	1.000	1.000	1,000	0.100	1.000	0.000	100.000
44	Sample		SAMP	8081_W	1,000	1.000	1.000	1.000	0.100	1.000		100.000
45	Sample		SAMP	8081_W	1.000	1.000	1.000	1,000	0.100	1.000	0.000	100.000
46	Sample		SAMP	8081_W 8081_W	1.000	1,000	1.000	1.000	0.100	1.000	0.000	100.000
4.7	Sample		SAMP	8081 W	1.000	1.000	1.000	1,000	0.100	1.000	0.000	100.000
4.9	Sample		SAMP	8081 W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
49	Sample		SAMP	8081 W	1.000	1.000	1.000	1.000	0.100	1.000		100.000
50	Sample		SAMP	8081 W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
51	Sample		SAMP	8081 W	1.000	1.000	1,000	1.000	0.100	1.000	0.000	100.000
52	Sample		SAMP	8081 W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
53	Sample		SAMP	8081 W	1,000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
54	Sample		SAMP	8081 W	1,000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
55	Sample		SAMP	8081 W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
56	Sample		SAMP	8081 W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
57	Sample		SAMP	8081 W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
58	Sample				1.000	1.000	1.000	1.000	0.100	1.000		100.000
59	Sample		SAMP	8081_W	1,000	1.000	1.000	1.000	0.100	1.000		100.000
60	Sample Sample		SAMP	8081_W	1.000	1.000	1.000	1,000	0.100	1.000	0.000	100.000
61	Sample		SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
			SAMP	8081_W	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
6.2	Sample		SAMP	8081 W	1.000	1.000	1.000	1.000	0.100	1.000		100.000

# ORGANICS CLP-LIKE FORM 1'S & RAW DATA PESTICIDES - TCLP

Heptachlor

Methoxychlor

Heptachlor epoxide

### CLIENT SAMPLE ID

0.0005

0.0005

0.0005

U

U

U

						16-E-100	3-T1-A	
Lab Name:	SPL, Inc.							
Lab Code:	SPLLAF				SDG No.:			03050225
Matrix:	SOIL				Lab Sample ID:		0305	0225-15D
Sample wt/vol:	100.0	(g/mL)	9	1	Lab File ID:		GH\GE187	718.RAW"
Level:	LOW				Date Collected:			5/3/03
% Moisture:					Date Extracted:			5/16/03
GC Column:			ID:	(mm)	Date Analyzed:			5/18/03
Extract Volume:	10000	(ul)			Dilution Factor:			1.0
					CONCENTRATION UNITS:		mg/L	
CAS	10.		COMP	DUND	(mg/L or ug/Kg)	mg/L	Q	
72-20-	-8		Endrin			0.0005	U	
58-89-	-9		gamma	-BHC		0.0005	U	

76-44-8

72-43-5

1024-57-3

Methoxychlor

### CLIENT SAMPLE ID

0.0059

ALCONO A MONOSPORO	and the					16-E-1003-	T1-AMS	
Lab Name:	SPL, Inc.							
Lab Code:	SPLLAF				SDG No.:		9	03050225
Matrix:	SOIL				Lab Sample ID:		0305	0225-15D
Sample wt/vol:	100.0	(g/mL)	G		Lab File ID:		GH\GE187	719.RAW"
Level:	LOW				Date Collected:			5/3/03
% Moisture:					Date Extracted:			5/16/03
GC Column:			ID:	(mm)	Date Analyzed:			5/18/03
Extract Volume:	10000	(ul)			Dilution Factor:			1.0
					CONCENTRATION UNITS:		mg/L	
CAS	NO.		СОМРО	UND	(mg/L or ug/Kg)	mg/L	Q	
72-20	)-8		Endrin			0.0053		
58-89	1-9		gamma-	BHC		0.0039		
76-44	1-8		Heptach	lor		0.0039		
1024	-57-3		Heptach	lor epoxide		0.0047		

72-43-5

### CLIENT SAMPLE ID

Lab Name:	SPL, Inc.					16-E-1003-	Γ1-AMSD	
Lab Code:	SPLLAF				SDG No.:			03050225
Matrix:	SOIL				Lab Sample ID:		0305	0225-15D
Sample wt/vol:	100.0	(g/mL)	G		Lab File ID:		GH\GE18	720.RAW"
Level:	LOW				Date Collected:			5/3/03
% Moisture:					Date Extracted:			5/16/03
GC Column:			ID:	(mm)	Date Analyzed:			5/18/03
Extract Volume:	10000	(ul)			Dilution Factor:			1.0
		1. Comment			CONCENTRATION UNITS		mg/L	
CAS	NO.		COMPOL	JND	(mg/L or ug/Kg)	mg/L	Q	
72-2	0-8		Endrin	11470070		0.0049		
58-8	9-9		gamma-B	BHC		0.0038		
76-4	4-8		Heptachlo	or		0.0036		
1024	-57-3		Heptachlo	or epoxide		0.0044		
72-4	3-5		Methoxyo	chlor		0.0052		

Methoxychlor

### CLIENT SAMPLE ID

0.0005

U

						MB-16	614	
Lab Name:	SPL, Inc.							
Lab Code:	SPLLAF				SDG No.:			03050225
Matrix:	LEACHATE				Lab Sample ID:			MB-16614
Sample wt/vol:	100.0	(g/mL)	М	L	Lab File ID:		GH\GE18	716.RAW"
Level:	LOW				Date Collected:			
% Moisture:					Date Extracted:			5/16/03
GC Column:			ID:	(mm)	Date Analyzed:			5/18/03
Extract Volume:	10000	(ul)			Dilution Factor:			1.0
		9/88			CONCENTRATION UNITS		mg/L	
CAS	NO.		COMPO	DUND	(mg/L or ug/Kg)	mg/L	Q	
72-2	8-0.9		Endrin			0.0005	U	
58-8	9-9		gamma-	-BHC		0.0005	U	
76-4	4-8		Heptach	nlor		0.0005	U	
102	4-57-3		Heptach	nlor epoxide		0.0005	U	

72-43-5

# ORGANICS QUALITY CONTROL RAW DATA PESTICIDES - TCLP

2F

## Surrogate Recovery - Sample Data TCLP Organochlorine Pesticides

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LEVEL:

LOW

GC Column(1):

ID:

(mm)

GC Column(2):

ID:

(mm)

EPA SAMPLE NO.	% REC1 (DCB) #	% REC2 (TCX) #	TOT
SAMPLE NO.	(DCB) **	(ICX) #	OUT
01 16-E-1003-T1-A	78	65	0
02 16-E-1003-T1-AMS	103	71	0
03 16-E-1003-T1-AMSD	87	65	0

QC Limits

% REC 1 (DCB) % REC 2 (TCX) DecachlorobiphenylTetrachloro-m-xylene

16-107 64-94 %

* Values outside of contract required QC limits

# Column to be used to flag recovery values

07/23/03 13:44

FORM II

SW8081

2E

### Surrogate Recovery - Lab QC Data TCLP Organochlorine Pesticides

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LEVEL:

LOW

GC Column(1):

ID:

(mm)

GC Column(2):

ID:

(mm)

EPA SAMPLE NO.	% REC1 (DCB) #	% REC2 (TCX) #	TOT
01 MB-16614	86	70	0
02 LCS-16614	86	68	0

QC Limits

% REC 1 (DCB) % REC 2 (TCX) DecachlorobiphenylTetrachloro-m-xylene

67-104 60-105 %

* Values outside of contract required QC limits

# Column to be used to flag recovery values

07/23/03 13:44

FORM II

SW8081

## 3 SPIKE/SPIKE DUPLICATE RECOVERY

Lab Name: SPL, Inc. SDG No.: 03050225

Lab Code: SPLLAF

07/23/03 13:46

Matrix Spike - Sample No.: 16-E-1003-T1-A

Analysis Date 5/18/03 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	SPIKE CONCENTRATION (mg/L)	SPIKE % REC#	QC. LIMITS REC.
Endrin	0.00500	0	0.0053	106	30-147
gamma-BHC	0.00500	0	0.0039	78	32-127
Heptachlor	0.00500	0	0.0039	78	34-130
Heptachlor epoxide	0.00500	0	0.0047	94	37-142
Methoxychlor	0.00500	0	0.0059	118	30-147

	SPIKE ADDED	SPIKE DUP CONCENTRATION	SPK DUP %		QC LIMITS	
COMPOUND	(mg/L)	(mg/L)	REC#	RPD#	RPD	REC.
Endrin	0.00500	0.0049	98	8	30	30-147
gamma-BHC	0.00500	0.0038	76	3	30	32-127
Heptachlor	0.00500	0.0036	72	8	30	34-130
Heptachlor epoxide	0.00500	0.0044	88	7	30	37-142
Methoxychlor	0.00500	0.0052	104	13	30	30-147

# Colum	n to be	used to fla	g reco	vегу а	and RPD	values w	th an asterisk	
* Values	outside	of QC lim	its					
RPD:	0	out of		5	outside	e limits		
Spike Recovery:		Ī	0	οι	ut of	10	outside limits	

FORM III

SW8081

### 3A SPIKE RECOVERY

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID

LCS-16614

Level:(low/med)

LOW

Analysis Date

05/18/03

File ID

GH\GE18717.RAW"

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	SPIKE CONCENTRATION (mg/L)	SPIKE % REC #	QC. LIMITS REC.
Endrin	0.00500	0	0.0054	108	30-147
gamma-BHC	0.00500	0	0.0037	74	32-127
Heptachlor	0.00500	0	0.0038	76	34-130
Heptachlor epoxide	0.00500	0	0.0041	82	37-142
Methoxychlor	0.00500	0	0.0046	92	30-147

#	Column	to ho	used to	flag	recovery	and	DDD	walues	mith	an	actorick	÷

* Values outside of QC limits

Spike Recovery:

0 out of

5 outside limits

07/23/03 13:46

FORM III

SW8081

### CLIENT SAMPLE ID

LCS-16614 Lab Name: SPL, Inc. Lab Code: SPLLAF SDG No.: 03050225 Matrix: LEACHATE Lab Sample ID: LCS-16614 Sample wt/vol: 100.0 (g/mL) ML Lab File ID: GH\GE18717.RAW" Date Collected: Level: LOW Date Extracted: 5/16/03 % Moisture: Date Analyzed: 5/18/03 GC Column: ID: (mm) Dilution Factor: 1.0 Extract Volume: 10000 (ul) CONCENTRATION UNITS: mg/L CAS NO. COMPOUND (mg/L or ug/Kg) Q mg/L 72-20-8 Endrin 0.0054 58-89-9 gamma-BHC 0.0037 76-44-8 Heptachlor 0.0038 1024-57-3 Heptachlor epoxide 0.0041 72-43-5 Methoxychlor 0.0046

4A

### VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB-16614

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

MB-16614

Lab File ID:

GH\GE18716.RAW"

Date Extracted:

Date Analyzed:

5/18/03

5/16/03

Time Analyzed:

20:53

GC Column:

ID:

(mm)

Heated Purge: (Y/N)

N

Instrument ID:

VAR1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	LCS-16614	LCS-16614	GH\GE18717.RAW"	5/18/03	21:22
02	16-E-1003-T1-A	03050225-15D	GH\GE18718.RAW"	5/18/03	21:51
03	16-E-1003-T1-AMS	03050225-15D	GH\GE18719.RAW"	5/18/03	22:20
04	16-E-1003-T1-AMSD	03050225-15D	GH\GE18720.RAW"	5/18/03	22:49

## ORGANICS INITIAL CALIBRATION RAW DATA PESTICIDES - TCLP

### Form 6 Initial Calibration Data

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID:

VAR1

Calibration Start:

05/18/03 15:07

Calibration Finish:

05/18/03 18:00

GC Column:

ID:

(mm)

LAB FILE ID: PEST5 =

SVOL\VARGH\GE18704.RAW

PEST300=

SVOL\VARGH\GE18709.RAW

PEST10=

SVOL\VARGH\GE18705.RAW

PEST400=

SVOL\VARGH\GE18710.RAW

PEST50= PEST100=

PEST200=

SVOL\VARGH\GE18706.RAW

SVOL\VARGH\GE18707.RAW SVOL\VARGH\GE18708.RAW

PEST5 PEST10 PEST50 PEST100 PEST200 PEST300 PEST400 % COMPOUND R² RRF RSD Endrin 1593.1 1903.9 1584.52 1332.27 1326.135 1252.0633 1107.90625 1442.84 18.5465 0.99873 gamma-BHC 2595.2 2146.8 2124.12 1825.4415 1816.3038 1696.5221 1534.8398 1962.75 18.0635 0.99178 Heptachlor 2408.294 1962.343 1964.3608 1651.1412 1635.9872 1503.6747 1306.74723 1776.08 20.5535 0.99878 Heptachlor epoxide 2270.4 1705.2 1732.4 1485.59 1466.555 1381.0767 1228.2225 1609.92 21.1310 0.99008 Methoxychlor 1261.214 3706.458 840.2148 723.7853 612.0724 538.616275 634.455 1188.12 95.6213 0.99836 Decachlorobiphenyl 1495.7 1062.3 1387.28 1184.365 1107.0767 1182.7 981.245 1200.1 15.1564 0.99894 Tetrachloro-m-xylene 1573.1 1259.8 1250.6 1071.195 1048.25 962.53333 867.97375 1147.64 20.5092 0.99950 4.4'-DDD 1443.6 1188.1 1745.8112 1205.2482 1178.489 1111.5167 994.93625 1266.81 19.7743 0.99656 4,4'-DDE 1995.534 1644.7 1726.96 1451.99 1447.715 1369.2767 1219.46 1550.81 16.6653 0.99042 4,4'-DDT 1474.8 1253.5 1365.85 1183.19 1198.695 1135.9892 1021.495 1233.36 12.1321 0.99190 Endrin aldehyde 1161.1 963.3 1070.48 924.53 919.07 900.6498 790.688225 961.403 12.5801 0.99050 Endrin ketone 4824.136 2613.718 1795.5058 1333.16 1351.88 1303.9245 1159.9625 2054.61 64.1653 0.99274

Continuing Calibration Check
System Performance Check Compounds

07/23/03 13:46

## ORGANICS CONTINUING CALIBRATION RAW DATA PESTICIDES - TCLP

### 7 CONTINUING CALIBRATION CHECK

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID:

VAR1

Calibration Date:

5/18/03

Time:

8:24 PM

Lab File ID:

GH\GE18715.RAW"

Init. Calib. Dates:

5/18/03

5/18/03

Init. Calib. Times:

15:07

18:00

GC Column:

ID:

(mm)

	CURVE	AVG.	STD.	MIN		MAX	THEO	RCVR		MAX
COMPOUND	TYPE	RF/RRF	RF/RRF	RRF	%D	%D	CONC	CONC	%D²	%D²
4,4°-DDD	2ORDR						100	110	10.0	40
4,4*-DDE	10RDR						100	130	30.0	40
4,4'-DDT	1ORDR						100	130	30.0	40
Decachlorobiphenyl	20RDR						100	110	10.0	40
Endrin	20RDR						100	110	10.0	40
Endrin aldehyde	1ORDR						100	130	30.0	40
Endrin ketone	1ORDR						100	120	20.0	40
gamma-BHC	10RDR						100	120	20.0	40
Heptachlor	20RDR						100	100	0.0	40
Heptachlor epoxide	10RDR						100	120	20.0	40
Methoxychlor	2ORDR						100	110	10.0	40
Tetrachloro-m-xylene	2ORDR						100	100	0.0	40

^{*} Continuing Calibration Check

^{**} System Performance Check Compounds

### CONTINUING CALIBRATION CHECK

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID:

VAR1

Calibration Date:

5/18/03

Time:

11:17 PM

Lab File ID:

Init. Calib. Dates:

5/18/03

5/18/03

GH\GE18721.RAW"

Init. Calib. Times:

15:07

18:00

GC Column:

ID:

(mm)

	CURVE	AVG.	STD.	MIN		MAX	THEO	RCVR		MAX
COMPOUND	TYPE	RF/RRF	RF/RRF	RRF	%D	%D	CONC	CONC	%D²	%D²
4,4*-DDD	2ORDR						100	100	0.0	40
4,4´-DDE	10RDR						100	120	20.0	40
4,4'-DDT	10RDR						100	120	20.0	40
Decachlorobiphenyl	2ORDR						100	110	10.0	40
Endrin	2ORDR						100	100	0.0	40
Endrin aldehyde	10RDR						100	120	20.0	40
Endrin ketone	1ORDR						100	120	20.0	40
gamma-BHC	1ORDR						100	100	0.0	40
Heptachlor	2ORDR						100	94	6.0	40
Heptachlor epoxide	10RDR						100	110	10.0	40
Methoxychlor	2ORDR						100	110	10.0	40
Tetrachloro-m-xylene	2ORDR						100	92	8.0	40

^{*} Continuing Calibration Check

^{**} System Performance Check Compounds

### ORGANICS ANALYTICAL SEQUENCE

### PESTICIDES - TCLP

### 8D ANALYTICAL SEQUENCE

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

RunID:

VAR1_030518C

GC Column:

ID:

(mm)

Init. Calib. Date(s):

5/18/03

5/18/03

Instrument ID: VAR1

### THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES ,BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT	Sequence # #	RT Ref. Seq #
01 PEST100	PEST100	5/18/03	20:24			70734	15 0
02 MB-16614	MB-16614	5/18/03	20:53			70734	6 707345
03 LCS-16614	LCS-16614	5/18/03	21:22			70734	707345
04 16-E-1003-T1-A	03050225-15D	5/18/03	21:51			70734	8 707345
05 16-E-1003-T1-AMS	03050225-15D	5/18/03	22:20			70734	9 707345
06 16-E-1003-T1-AMSD	03050225-15D	5/18/03	22:49	-		70735	0 707345
07 PEST100	PEST100	5/18/03	23:17			70735	1 0

QC LIMITS (± 0.00 MINUTES) (± 0.00 MINUTES)

# Column used to flag values outside QC limits with an asterisk.

FORM VIII PEST

SW8081

^{**} Values outside of QC limits.

### ORGANICS SAMPLE & STANDARD PREP LOGS PESTICIDES - TCLP

### SPL, Inc.

### PREP BATCH REPORT

Prep Batch ID: 16614

Prep Code:

PR3510_TCLP_8081

Techician:

**Conrad Meaux** 

Page: 1 of 1

Prep Start Date: 5/16/03 2:50:30 PM

Prep End Date: 5/16/03 4:45:00 PM

Sample ID	Matrix	рН	wt (Kg)	Ini vol (mL)	Sol Added	Spk Added	Sol Recov	Fin Vol (mL)	factor	SDG
03050225-15D	Soil		0	100	0		0	10	0.1	
The prep	HoldTime was ex	ceeded by 6	days.							
03050225-15DMS	Soil		0	100	0		0	10	0.1	
The Prep	Hold Time was e	xceeded by 6	days.							
03050225-15DMSD	Soil		0	100	0		0	10	0.1	
The Prep	Hold Time was e	xceeded by 6	days.							
LCS-16614				100	0		0	10	0.1	
MB-16614				100	0		0	10	0.1	
								1,383,400	A113.0	

### ORGANICS RUN LOGS

### PESTICIDES - TCLP

Number of Times Edited : 5

Sequence File Header Information:
Number of Rows : 53
Instrument Type : 760 / 900 Series Intelligent Interface
Injection Type : SINGLE

low	Туре	Sample Name	Sample Number	Sequence Sam Study Name	ple Descri Sample Amount	ptions - ISTD Amount	Channel A Sample Volume	Dil. Factor	Mult	Divisor	Addend	Norm. factor
1	Sample	 HERB150	PRIMER	8151 TCLP	1.000	1.000	1.000	1.000	1.000	1.000	0.000	
2	Sample	HEX .	HEX	B151_TCLP	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
3	Sample	HERRIO !	ICAL	8151 TCLP	1,000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
4	Sample	HERB20 2 HERB50 3 HERB60 7 HERB100 8	ICAL	8151 TCLP	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
5		uppeso K	ICAL	8151 TCLP	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
6	Sample	HERBSO 7	ICAL	8151 TCLP	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
7	Sample Sample	HEBB100 Q	ICAL	8151 TCLP	1.000	1.000	1.000	1.000	1.000		0.000	100.000
9	Sample Sample	HERB125	ICAL	8151 TCLP	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
9	Sample	HERB150 10	ICAL	8151_TCLP	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
10	Sample	HEX	HEX	8151 TCLP	1.000	1,000	1.000	1.000	1.000	1.000	0.000	100,000
11		HERB50	CCV	8151_TCLP	1.000	1.000	1.000	1.000	1.000	1.000	0.000	100.000
12	Sample	MB-16703	MBLK	8151 TCLP	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
	Sample	LCS-16703	LCS	8151_TCLP	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
13	Sample Sample	03050225-15D	SAMP	8151 TCLP	1.000	1.000	1.000	1.000	0.100	1.000	0.000	100.000
14	Sample	03050225-15DMS	MS	8151 TCLP	1.000	1.000		1.000	0.100		0.000	100.000
15	Sample	03050225-15DMSD	MSD	8151 TCLP	1,000	1.000		1.000	0.100		0.000	100.000
16	Sample		MBLK	8151 TCLP	1.000	1.000		1.000	0.100		0.000	100.000
17	Sample	MB=16793		8151 TCLP	1.000	1.000		1.000	0.100		0.000	
18	Sample	LCS-16793	LCS SAMP	8151 TCLP	1.000	1.000		1.000	0.100		0.000	
19	Sample	03050808-01A	MS	8151_TCLP	1.000	1.000		1.000	0.100		0.000	
20	Sample	03050808-01AMS	MSD	8151 TCLP	1.000	1.000		1.000	0.100		0.000	
21	Sample	03050808-01AMSD		8151_TCLP	1.000			1.000	1.000		0.000	
22	Sample	HERB50	CCV		1.000	1.000		1.000	0.333		0.000	
23	Sample	MB-16748	MBLK	8151_S				1.000	0.333		0.000	
24	Sample	LCS-16748	LCS	8151_S	1.000			1.000	0.333		0.000	
25	Sample	03050678-01A	SAMP	8151_S	1.000	1.000		1.000	0.333		0.000	
26	Sample	03050678-02A	SAMP	8151_S	1,000	1.000			0.333		0.000	
27	Sample	03050678-02AMS	MS	8151_S	1.000			1.000	0.333		0.000	
2.8	Sample	03050678-02AMSD	MSD	8151_S	1.000	1.000		1.000	1.000		0.000	
29	Sample	HERB50	CCV	8151_S	1.000			1.000			0.000	
30	Sample	HEX	HEX	8151_S	1.000			1.000	1.000		0.000	
31	Sample	HEX	HEX	8151_S	1.000			1.000	1.000		0.000	
32	Sample	 HERB50	CCV	8151_S	1.000			1.000	1.000		0.000	
33	Sample			9151_S	1.000			1.000	0.333			
34	Sample			0151_S	1.000			1.000	0.333		0.000	
35	Sample			8151_S	1.000			1.000	0.333		0.000	
36	Sample			0151_S	1,000			1,000	0.333		0.000	
37	Sample			8151_S	1.000			1.000	0.333			
38	Sample			8151_S	1.000			1.000	0.333			
3.9	Sample			8151_S	1.000				0.333			
4.0	Sample			8151_S	1.000			1.000	0.333			
41	Sample			8151_S	1.000	1.000			0.333			
42	Sample			8151_S	1.000				0.333			
43	Sample			8151_S	1.000				0.333			
4.4	Sample			8151 S	1.000				0.333			
4.5	Sample			8151_S	1.000			1.000	0.333			
4.6				8151_S	1.000				0.33			
4.7				8151_S	1.000				0.333			
4.8	Sample			8151_S	1.000	1,000	1.000		0.333			
49				8151_S	1.000	1.000	1.000	1.000	0.333			
50				8151 S	1,000	1.000	1.000	1.000	0.333			
51	Sample			8151 S	1,000	1,000	1,000	1.000	0.333	1.000		
52	Sample			8151 S	1.000	1.000	1.000	1.000	0.33	3 1.000		
-	Sample			8151 S	1,000	1.000	1.000	1.000	0.333	1.000	0.000	100.000

# METALS CLP-LIKE FORMS

### COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Matrix
16-E-1003-T1-A	03050225-15	05/03/03 9:00	05/05/03	Soil
43-E-1001-P1-A	03050225-01	05/02/03 12:15	05/05/03	Soil

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature

Signature:

06/27/03 11:28

Date:

Name:

**COVER PAGE - IN** 

Inorganic Data Reviewer

CLIENT SAMP ID

43-E-1001-P1-A

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

03050225-01

Matrix:

SOIL

Date Received:

5/5/03

Level:

LOW

Total/Dissolved:

Total

% Moisture:

0.0

Prep Method:

STND

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units
7440-38-2	Arsenic	4.9		2		Р	mg/Kg
7440-39-3	Barium	4300	В	5000		A	mg/Kg
7440-43-9	Cadmium	0.083	U	1		P	mg/Kg
7440-47-3	Chromium	7.6		1		P	mg/Kg
7439-92-1	Lead	25.1		1		P	mg/Kg
7439-97-6	Mercury	0.010	В	0.095		AV	mg/Kg
7782-49-2	Selenium	1.8	U	2		Р	mg/Kg
7440-22-4	Silver	0.050	U	1		P	mg/Kg
7440-66-6	Zinc	40.7		2	N	P	mg/Kg

CLIENT SAMP ID

43-E-1001-P1-A

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

03050225-01

Matrix:

SOIL

Date Received:

5/5/03

Level:

LOW

Total/Dissolved:

**Total** 

% Moisture:

0.0

Prep Method:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units
	Sodium Adsorption Ratio	0.80		0.1		WL	NA

CLIENT SAMP ID

43-E-1001-P1-A

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

03050225-01

Matrix:

SOIL

Date Received:

5/5/03

Level:

LOW

Total/Dissolved:

Total

% Moisture:

0.0

Prep Method:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units
	Exchangeable Sodium Percentage-ESP	5	.5	0.1		WL	%

CLIENT SAMP ID

43-E-1001-P1-A

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

03050225-01

Matrix:

SOIL

Date Received:

5/5/03

Level:

LOW

Total/Dissolved:

Total

% Moisture:

0.0

Prep Method:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units
	Cation Exchange Capacity	5.0	U	5		WL	meq as Na

CLIENT SAMP ID

16-E-1003-T1-A

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

03050225-15

Matrix:

SOIL

Date Received:

5/5/03

Level:

LOW

Total/Dissolved:

Total

% Moisture:

0.0

Prep Method:

TCLP

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units
7440-38-2	Arsenic	146	В	200		Р	ug/L
7440-39-3	Barium	16000		250		P	ug/L
7440-43-9	Cadmium	3.4	U	100		Р	ug/L
7440-47-3	Chromium	12.4	В	100		P	ug/L
7439-92-1	Lead	72.8	В	200		P	ug/L
7439-97-6	Mercury	37.0	U	90		AV	ug/L
7782-49-2	Selenium	63.5	В	200		P	ug/L
7440-22-4	Silver	8.8	В	100		P	ug/L

CLIENT SAMP ID

16-E-1003-T1-A

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Lab Sample ID:

03050225-15

Matrix:

SOIL

Date Received:

5/5/03

Level:

LOW

Total/Dissolved:

Total

% Moisture:

0.0

Prep Method:

STND

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units
7440-38-2	Arsenic	0.80	U	2		Р	mg/Kg
7440-39-3	Barium	244		1		P	mg/Kg
7440-43-9	Cadmium	0.060	U	1		P	mg/Kg
7440-47-3	Chromium	3.1		1		P	mg/Kg
7439-92-1	Lead	69.0		1		P	mg/Kg
7439-97-6	Mercury	0.062	В	0.095		AV	mg/Kg
7782-49-2	Selenium	0.50	U	2		P	mg/Kg
7440-22-4	Silver	0.070	U	1		Р	mg/Kg

### 2A Initial Calibration Verification

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: ICV

Analysis Date: 05/09/03 15:07

Sample Type: ICV

Run ID:

ICP2_030509A-698032

Analyte	True	Found	%R	М	9333	QC. MITS HIGH
Arsenic	1000	996	99.6	Р	90	110
Barium	1000	996	99.6	Р	90	110
Cadmium	1000	1000	100.2	P	90	110
Chromium	1000	999	99.9	Р	90	110
Lead	1000	994	99.4	P	90	110
Selenium	1000	1011	101.1	Р	90	110
Silver	1000	1000	100.2	P	90	110
Zinc	1000	996	99.6	Р	90	110

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV1

Analysis Date:

05/09/03 17:38

Sample Type: CCV

Run ID:

ICP2 030509A-698042

Analyte	True	Found	%R	м	0.65	QC. VITS HIGH
Arsenic	500	479	95.8	Р	90	110
Barium	500	508	101.6	Р	90	110
Cadmium	500	494	98.8	Р	90	110
Chromium	500	504	100.8	Р	90	110
Lead	500	491	98.3	Р	90	110
Selenium	500	493	98.6	Р	90	110
Silver	500	487	97.4	Р	90	110
Zinc	500	492	98.4	P	90	110

2A Continuing Calibration Verification

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV2

Analysis Date:

05/09/03 19:58

Sample Type: CCV

Run ID:

ICP2 030509A-698054

Analyte	True	Found	%R	М		QC. MITS HIGH
Arsenic	500	467	93.4	Р	90	110
Barium	500	512	102.5	Р	90	110
Cadmium	500	494	98.8	Р	90	110
Chromium	500	511	102.3	Р	90	110
Lead	500	497	99.4	Р	90	110
Selenium	500	494	98.8	Р	90	110
Silver	500	491	98.3	Р	90	110
Zinc	500	497	99.4	Р	90	110

True

500

500

500 500

500

500

500

500

Lab Name:

SPL, Inc.

SDG No.: 03050225

110

110

110

110

Lab Code:

SPLLAF

Lab Sample ID: CCV3

Analysis Date: 05

05/09/03 22:17

Analyte

Arsenic

Barium Cadmium

Lead Selenium

Silver

Zinc

Chromium

Sample Type: CCV

Concentration Units: ug/L

Run ID:

ICP2 030509A-698066

			QC. MITS
%R	M	LOW	HIGH
93.4	Р	90	110
103.0	Р	90	110
99.4	Р	90	110
102.1	P	90	110
	93.4 103.0 99.4	93.4 P 103.0 P 99.4 P	%R M LOW  93.4 P 90  103.0 P 90  99.4 P 90

101.8 P 90

100.4 P

97.9 P

115.8 P 90

90

90

509

502

489

579

2A Initial Calibration Verification

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: ICV

Analysis Date:

05/16/03 10:10

Sample Type: ICV

Run ID:

ICP2_030516B-715917

Analyte	True	Found	%R	м	m - m A	QC. MITS HIGH
Arsenic	1000	980	98.0	Р	90	110
Barium	1000	989	98.9	Р	90	110
Cadmium	1000	1000	100.3	Р	90	110
Chromium	1000	992	99.2	P	90	110
Lead	1000	992	99.2	Р	90	110
Selenium	1000	988	98.8	Р	90	110
Silver	1000	990	99.0	P	90	110

2A
Continuing Calibration Verification

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV1

Analysis Date:

05/16/03 12:03

Sample Type: CCV

Concentration Units: ug/L

Run ID:

ICP2 030516B-715927

					1 225	DC. MITS
Analyte	True	Found	%R	М	LOW	HIGH
Arsenic	500	475	94.9	Р	90	110
Barium	500	513	102.6	Р	90	110
Cadmium	500	509	101.8	Р	90	110
Chromium	500	514	102.8	Р	90	110
Lead	500	511	102.2	Р	90	110
Selenium	500	510	102.0	Р	90	110
Silver	500	505	100.9	Р	90	110

2A Continuing Calibration Verification

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV2

Analysis Date:

05/16/03 12:54

Sample Type: CCV

Run ID:

ICP2_030516B-715930

Analyte	True	Found	%R	м		QC. VITS HIGH
Arsenic	500	487	97.4	Р	90	110
Barium	500	516	103.2	Р	90	110
Cadmium	500	505	100.9	Р	90	110
Chromium	500	517	103.4	Р	90	110
Lead	500	508	101.7	P	90	110
Selenium	500	503	100.7	Р	90	110
Silver	500	506	101.3	Р	90	110

2A Initial Calibration Verification

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: ICV

Analysis Date:

05/08/03 11:43

Sample Type: ICV

Run ID:

FIMS-100 030508A-694988

			5400000		- 22	QC. MITS
Analyte	True	Found	%R	М	LOW	HIGH
Mercury	10	9.94	99.4	AV	90	110

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV1

Analysis Date:

Run ID:

05/08/03 12:22

FIMS-100 030508A-694999

Sample Type: CCV

					17 395	QC. MITS
Analyte	True	Found	%R	М	LOW	HIGH
Mercury	10	9.7	97.0	ΑV	80	120

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV2

Analysis Date:

05/08/03 12:51

Sample Type: CCV

Run ID:

FIMS-100_030508A-695007

					QC. LIMITS	
Analyte	True	Found	%R	M	LOW	HIGH
Mercury	10	9.7	97.1	AV	80	120

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV3

Analysis Date:

05/08/03 13:00

Sample Type: CCV

Concentration Units: ug/L

Run ID:

FIMS-100_030508A-695009

Analyte					QC. LIMITS	
	True	Found	%R	M	LOW	HIGH
Mercury	10	9.8	97.8	AV	80	120

2A
Continuing Calibration Verification

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV4

Analysis Date:

05/08/03 13:13

Sample Type: CCV

Run ID:

FIMS-100 030508A-695013

Analyte					QC. LIMITS	
	True	Found	%R	M	LOW	HIGH
Mercury	10	9.58	95.8	AV	80	120

2A Initial Calibration Verification

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: ICV

Analysis Date:

01/01/00 13:58

Sample Type: ICV

Run ID:

FIMS-100_030516A-705258

Analyte					QC. LIMITS	
	True	Found	%R	М	LOW	HIGH
Mercury	10	11	110.0	AV	90	110

2A
Continuing Calibration Verification

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV1

Analysis Date:

01/01/00 14:37

Sample Type: CCV

Run ID:

FIMS-100 030516A-705265

					QC. LIMITS	
Analyte	True	Found	%R	М	LOW	HIGH
Mercury	10	10.7	106.5	AV	80	120

### 2A Initial Calibration Verification

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: ICV

Analysis Date:

05/12/03 13:00

Sample Type: ICV

Run ID:

3100_030512C-698680

Concentration Units: mg/Kg

					C	QC. MITS
Analyte	True	Found	%R	М	LOW	HIGH
Barium	10000	10280	102.8	Α	90	110

### 2A Continuing Calibration Verification

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV1

Analysis Date:

05/12/03 13:00

Sample Type: CCV

Run ID:

3100_030512C-698682

Concentration Units: ug/L

	_				LII	QC. MITS
Analyte	True	Found	%R	M	LOW	HIGH
Barium	10000	10110	101.1	Α	80	120

### 2A Continuing Calibration Verification

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV2

Analysis Date:

05/12/03 13:00

Sample Type: CCV

Run ID:

3100_030512C-698692

Concentration Units: ug/L

					1000	QC. MITS
Analyte	True	Found	%R	М	LOW	HIGH
Barium	10000	9870	98.7	Α	80	120

3 Initial Calibration Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

<u>ICB</u>

Matrix:

SOIL

Analysis Date:

05/09/03 15:20

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	12.0	υ	20	Р	ug/L
7440-39-3	Barium	1.7	U	10	Р	ug/L
7440-43-9	Cadmium	0.83	U	10	Р	ug/L
7440-47-3	Chromium	1.1	U	10	Р	ug/L
7439-92-1	Lead	4.0	U	10	Р	ug/L
7782-49-2	Selenium	18.0	U	20	Р	ug/L
7440-22-4	Silver	0.50	U	10	Р	ug/L
7440-66-6	Zinc	7.8	U	20	Р	ug/L

3 Method Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

MBLK-16353

Matrix:

SOIL

Total/Dissolved: Total

Analysis Date: 05/09/03 16:27

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	1.2	U	2	Р	mg/kg
7440-39-3	Barium	0.34	В	1	P	mg/kg
7440-43-9	Cadmium	0.083	U	1	P	mg/kg
7440-47-3	Chromium	0.24	В	1	P	mg/kg
7439-92-1	Lead	0.40	U	1	P	mg/kg
7782-49-2	Selenium	1.8	U	2	P	mg/kg
7440-22-4	Silver	0.093	В	1	P	mg/kg
7440-66-6	Zinc	0.78	U	2	P	mg/kg

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB1

Matrix:

SOIL

Analysis Date:

05/09/03 17:50

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	12.0	U	20	Р	ug/L
7440-39-3	Barium	1.7	U	10	Р	ug/L
7440-43-9	Cadmium	0.83	U	10	Р	ug/L
7440-47-3	Chromium	1.1	U	10	Р	ug/L
7439-92-1	Lead	4.0	U	10	Р	ug/L
7782-49-2	Selenium	18.0	U	20	Р	ug/L
7440-22-4	Silver	0.50	U	10	Р	ug/L
7440-66-6	Zinc	7.8	U	20	Р	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB2

Matrix:

SOIL

Analysis Date:

ate: <u>05/09/03 20:10</u>

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	12.0	U	20	Р	ug/L
7440-39-3	Barium	1.7	U	10	P	ug/L
7440-43-9	Cadmium	0.83	U	10	Р	ug/L
7440-47-3	Chromium	1.1	U	10	Р	ug/L
7439-92-1	Lead	4.0	U	10	Р	ug/L
7782-49-2	Selenium	18.0	U	20	Р	ug/L
7440-22-4	Silver	0.50	U	10	Р	ug/L
7440-66-6	Zinc	7.8	U	20	Р	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB3

Matrix:

SOIL

Analysis Date:

05/09/03 22:29

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	12.0	U	20	Р	ug/L
7440-39-3	Barium	1.7	U	10	Р	ug/L
7440-43-9	Cadmium	0.83	U	10	Р	ug/L
7440-47-3	Chromium	1.1	U	10	Р	ug/L
7439-92-1	Lead	4.0	U	10	Р	ug/L
7782-49-2	Selenium	18.0	U	20	P	ug/L
7440-22-4	Silver	0.50	U	10	Р	ug/L
7440-66-6	Zinc	7.8	U	20	P	ug/L

3 Initial Calibration Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

ICB

Matrix:

**LEACHATE** 

Analysis Date:

05/16/03 10:20

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	14.9	U	40	Р	ug/L
7440-39-3	Barium	8.3	U	50	Р	ug/L
7440-43-9	Cadmium	3.4	U	20	Р	ug/L
7440-47-3	Chromium	3.7	U	20	Р	ug/L
7439-92-1	Lead	8.1	U	40	Р	ug/L
7782-49-2	Selenium	16.6	U	40	Р	ug/L
7440-22-4	Silver	3.5	U	20	Р	ug/L

3 Method Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

MBLK-16576

Matrix:

LEACHATE

Total/Dissolved: TCLP

Analysis Date: 05/16/03 11:06

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	74.0	U	200	Р	ug/L
7440-39-3	Barium	42.0	U	250	P	ug/L
7440-43-9	Cadmium	17.0	U	100	P	ug/L
7440-47-3	Chromium	18.0	U	100	P	ug/L
7439-92-1	Lead	41.0	U	200	P	ug/L
7782-49-2	Selenium	83.0	-	200	P	ug/L
7440-22-4	Silver	17.0	-	100	P	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB1

Matrix:

LEACHATE

Analysis Date:

05/16/03 12:15

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	14.9	U	40	Р	ug/L
7440-39-3	Barium	8.3	U	50	Р	ug/L
7440-43-9	Cadmium	3.4	U	20	Р	ug/L
7440-47-3	Chromium	3.7	U	20	Р	ug/L
7439-92-1	Lead	8.1	U	40	Р	ug/L
7782-49-2	Selenium	16.6	-	40	P	ug/L
7440-22-4	Silver	3.5	U	20	P	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB2

Matrix

**LEACHATE** 

Analysis Date:

05/16/03 13:07

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-38-2	Arsenic	14.9	U	40	Р	ug/L
7440-39-3	Barium	8.3	U	50	Р	ug/L
7440-43-9	Cadmium	3.4	U	20	P	ug/L
7440-47-3	Chromium	3.7	U	20	Р	ug/L
7439-92-1	Lead	8.1	U	40	Р	ug/L
7782-49-2	Selenium	16.6	-	40	P	ug/L
7440-22-4	Silver	3.5	U	20	P	ug/L

3 Initial Calibration Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

ICB

Matrix:

SOIL

Analysis Date:

05/08/03 11:47

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	0.073		0.67	AV	ug/L

3 Method Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

MBLK-16342

Matrix:

SOIL

Total/Dissolved: Total

Analysis Date:

05/08/03 11:50

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	0.011	U	0.1	AV	mg/kg

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB1

Matrix:

SOIL

Analysis Date:

05/08/03 12:25

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	0.073	U	0.67	AV	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB2

Matrix:

SOIL

Analysis Date:

05/08/03 12:54

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	0.073	U	0.67	AV	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB3

Matrix:

SOIL

Analysis Date:

05/08/03 13:03

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	0.073	U	0.67	AV	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB4

Matrix:

SOIL

Analysis Date:

05/08/03 13:16

Run ID:

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	0.073		0.67	AV	ug/L

3 Initial Calibration Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

ICB

Matrix:

LEACHATE

Analysis Date:

01/01/00 14:02

Run ID:

FIMS-100 030516A-705259

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	1.2	U	3	AV	ug/L

3 Method Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

MBLK-16593

Matrix:

**LEACHATE** 

Total/Dissolved: Total

Analysis Date:

01/01/00 14:05

Run ID:

FIMS-100 030516A-705260

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	37.0	U	90	AV	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB1

Matrix:

LEACHATE

Analysis Date:

01/01/00 14:40

Run ID:

FIMS-100 030516A-705266

CAS No.	Analyte	Conc.	С	PQL	М	Units
7439-97-6	Mercury	1.2	U	3	AV	ug/L

3 Initial Calibration Blank

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

ICB

Matrix:

SOIL

Analysis Date:

05/12/03 13:00

Run ID:

3100 030512C-698681

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-39-3	Barium	400	U	1000	Α	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB1

Matrix:

SOIL

Analysis Date:

05/12/03 13:00

Run ID:

3100 030512C-698683

CAS No.	Analyte	Conc.	С	PQL	м	Units
7440-39-3	Barium	400	U	1000	Α	ug/L

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Sample ID:

CCB2

Matrix:

SOIL

Analysis Date:

05/12/03 13:00

Run ID:

3100 030512C-698693

CAS No.	Analyte	Conc.	С	PQL	М	Units
7440-39-3	Barium	400	U	1000	A	ug/L

3 Method Blank

Lab Name:

SPL, Inc.

SDG No.:

03050224

Lab Code:

SPLLAF

Sample ID:

MBLK-16401

Matrix:

SOIL

Total/Dissolved: Total

Analysis Date:

05/13/03 15:30

3100 030513F-700848

Run ID:

CAS No.	Analyte  Cation Exchange Capacity	Conc.	С	PQL	М	Units
	Cation Exchange Capacity	5.0	U	5	WL	meq as N

### ICP INTERFERENCE CHECK SAMPLE

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

ICS Source: Lab ICS Mix

Total/Dissolved:

Total

ICP ID Number:

ICP2

Concentration Units: ug/L

	True			Initial Found			Final Found	
	Sol.	Sol.	Sol.	Sol.		Sol.	Sol.	
Analyte	Α	AB	Α	AB	%R	Α	AB	%R
Aluminum	500000	500000	509371.548	509834.96	102.0	492670.896	496331.2804192	99.3
Arsenic	0	10000	0	10421.4827	104.2	11.5647	10082.12907579	100.8
Barium	0	3000	-8.794	2904.32379	96.8	-8.45	2978.709618345	99.3
Cadmium	0	3000	0	3047.08617	101.6	-0.85724	3000.452525033	100.00
Calcium	500000	500000	503398.04	501649.495	100.3	507889.049	506740.5674132	101.3
Chromium	0	3000	1.3332	2995.20412	99.8	0	3069.259617373	102.3
Iron	200000	200000	189471.407	188393.262	94.2	189587.006	189765.7231061	94.9
Lead	0	10000	12.2096	9703.80625	97.0	10.1762	9695.302440132	97.0
Magnesium	500000	500000	563919.456	557910.805	111.6	558883.617	556927.1879817	111.4
Selenium	0	5000	21.3161	5191.42360	103.8	0	5140.248441236	102.8
Silver	0	3000	0	3174.87295	105.8	-0.8151	3142.864048268	104.8
Zinc	0	3000	0	2981.85848	99.4	0	2982.586002431	99.4

Control Limits = 80% - 120%

07/02/03 8:29

FORM IV - IN

### ICP INTERFERENCE CHECK SAMPLE

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Total/Dissolved:

TCLP

ICP ID Number:

ICP2

SDG No.: 03050225

ICS Source: Lab ICS Mix

Concentration Units: ug/L

	True			Initial Found			Final Found	
	Sol.	Sol.	Sol.	Sol.		Sol.	Sol.	
Analyte	Α	AB	Α	AB	%R	Α	AB	%R
Aluminum	500000	500000	487532.2137	482096.6199	96.4	486752.0785	481268.64418224	96.3
Arsenic	0	10000	0	9885.089966	98.9	0	9549.2524312918	95.5
Barium	0	3000	0	2729.957652	91.0	0	2761.5263693895	92.1
Cadmium	0	3000	0	3018.7389	100.6	0	2961.4496770373	98.7
Calcium	500000	500000	476366.654	469.3863550	93.9	480399.3099	477822.77739703	95.6
Chromium	0	3000	- 0	2849.298425	95.0	0	2881.1790046182	96.0
Iron	200000	200000	185226.6503	181.9785139	91.0	186299.4328	184.71395051335	92.4
Lead	0	10000	0	9051.036638	90.5	0	9037.1687337517	90.4
Magnesium	500000	500000	547300.0308	534.5862606	106.9	548562.0719	540148.98690583	108.0
Selenium	0	5000	0	4932.888934	98.7	0	4916.9202771213	98.3
Silver	0	3000	0	2800.940422	93.4	0	2776,4114721428	92.5

Control Limits = 80% - 120%

06/27/03 12:44

FORM IV - IN

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Matrix Spike - Client SampID:

Ext. Method: TCLP

43-E-1001-P1-AMS

Level:(low/med)

lyte	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	С	MS CONCENTRATION ug/L	MS % REC	Q	Q LIM LOW	C. IITS HIGH	М
nic	1000.00	145.6		9340	91.95		75	125	Р
um	1000.00	16010		26230	102.18		75	125	Р
mium	1000.00	17.0	U	9645	96.45		75	125	Р
omium	1000.00	18.5	U	9384	93.84		75	125	Р
1	1000.00	72.8		9098	90.25		75	125	Р
nium	1000.00	83.0	U	9660	95.97		75	125	P
er	1000.00	17.3	U	9350	93.5		75	125	Р
er	1000.00	17.3	U	9350	93.5			75	75 125

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Ext. Method:

STND

Matrix Spike - Client SampID:

43-E-1001-P1-AMS

Level:(low/med)

Analyte	SPIKE ADDED mg/kg	ADDED CONCENTRATION CONCENTRATION mg/kg mg/kg C mg/kg		MS CONCENTRATION mg/kg	MS % REC	Q		C. IITS HIGH	М
Arsenic	100.00	4.9000		93.4600	88.6		75	125	P
Barium	100.00	73.7027		153.1000	79.4		75	125	Р
Cadmium	100.00	0.0830	U	81.8200	81.8		75	125	Р
Chromium	100.00	7.6000		93.3300	85.7		75	125	P
Lead	100.00	25.1000		108.3000	83.1		75	125	Р
Selenium	100.00	1.8000	U	82.3800	82.4		75	125	Р
Silver	100.00	0.0500	U	80.7900	80.8		75	125	Р
Zinc	100.00	40.7000		122.4000	81.7		75	125	P

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Ext. Method:

STND

Matrix Spike - Client SampID:

43-E-1001-P1-AMS

Level:(low/med)

	SPIKE ADDED	MSD CONCENTRATION	MSD %		%		QC. LIMITS			
Analyte	mg/kg	mg/kg	REC	Q	RPD	Q	RPD	LOW	HIGH	М
Arsenic	100.00	94.2300	89.3		0.8		20	75	125	P
Barium	100.00	152.8000	79.1		0.2		20	75	125	Р
Cadmium	100.00	85.2400	85.2		4.1		20	75	125	Р
Chromium	100.00	94.8900	87.3		1.7		20	75	125	Р
Lead	100.00	107.3000	82.2		0.9		20	75	125	Р
Selenium	100.00	83.6100	83.6		1.5		20	75	125	Р
Silver	100.00	85.8500	85.8		6.1		20	75	125	P
Zinc	100.00	114.1000	73.4	N	7.0		20	75	125	Р

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Ext. Method:

STND

Matrix Spike - Client SampID:

03050027-07AMS

Level:(low/med)

Analyte	SPIKE ADDED mg/kg	SAMPLE CONCENTRATION mg/kg	С	MS CONCENTRATION mg/kg	MS % REC	Q		IC. NITS HIGH	М
Mercury	1.50	0.0340	В	1.4820	96.5		75		-

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Ext. Method:

STND

Matrix Spike - Client SampID:

03050027-07AMS

Level:(low/med)

	SPIKE ADDED				%		i	QC. LIMITS		
Analyte	mg/kg	mg/kg	REC	Q	RPD	Q	RPD	LOW	HIGH	М
Mercury	1.50	1.4590	95.0		1.6		20	75	125	AV

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Ext. Method:

TCLP

Matrix Spike - Client SampID:

16-E-1003-T1-AMS

Level:(low/med)

	SPIKE ADDED	SAMPLE CONCENTRATION		MS CONCENTRATION	MS %			C. NTS	
Analyte	ug/L	ug/L	C	ug/L	REC	Q	LOW	HIGH	M
Mercury	300.00	37.0000	U	327.9000	109.3		75	125	AV

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Ext. Method:

TCLP

Matrix Spike - Client SampID:

16-E-1003-T1-AMS

Level:(low/med)

	SPIKE ADDED	MSD CONCENTRATION	MSD %		%		81	QC. IMITS		
Analyte	ug/L	ug/L	REC	Q	RPD	Q	RPD	LOW	HIGH	М
Mercury	300.00	318.0000	106.0		3.1		20	75	125	AV

# Form 5B Post Digestion Spike/Post Digestion Spike Duplicate

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Ext. Method:

STND

Matrix Spike - Client SampID:

43-E-1001-P1-APDS

Level:(low/med)

Analyte	SPIKE ADDED mg/kg	SAMPLE CONCENTRATION mg/kg	c		PD: ENT mg/l	RATION	1	DS % REC	Q		C. IITS HIGH	М
Zinc	100.00	40.7000				130.8000		90.1		75	125	Р
Analyte	SPIKE ADDED mg/kg	PDSD CONCENTRATION mg/kg	PDS % REG		Q	% RPD	Q	RPI		QC. IMITS LOW	HIGH	м
Zinc	100.00	129.6000		88.9		0.9			20	75	125	

**DUPLICATES** 

CLIENT SAMP ID

16-E-1003-T1-AD

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Leachate

Total Total/Diss.:

% Moisture for Sample:

0.0

Lab Sample ID: 03050225-15

SDG No.: 03050225

Level: LOW

ug/L

% Solids for Duplicate:

Analyte	Control Limit	Sample (S)	С	Duplicate(D)	С	RPD	Q	М
Arsenic	20	145.6302	В	170.831	В	15.93		Р
Barium	20	16007.8135		14413.684		10.5		P
Cadmium	20	17.00000	U	17.000	U	0.0		P
Chromium	20	18.5000	U	18.5000	U	0.0		P
Lead	20	72.8000	В	59.392	В	0.0		P
Selenium	20	83.0	U	83.0	U	0.0	-	P
Silver	20	17.3	U	17.3	U	0.0		P

Concentration Units:

CLIENT SAMP ID

03050224-03ADUP

Lab Name:

Lab Code:

SPL, Inc.

SPLLAF

Matrix:

Soil

Total/Diss.: Total

% Moisture for Sample:

0.0

Lab Sample ID: 03050224-03

SDG No.: 03050225

Level: LOW

Concentration Units:

%

% Solids for Duplicate:

Analyte	Control Limit	Sample (S) C	Duplicate(D) C	RPD	Q	М
Exchangeable Sodium Percentage-ESP	20	3.300	3.300	0.0	-	w

CLIENT SAMP ID

03050224-03ADUP

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Soil

Total/Diss.:

Total

% Moisture for Sample:

0.0

Lab Sample ID: 03050224-03

SDG No.: 03050225

Level: LOW

Concentration Units:

meq as Na

% Solids for Duplicate:

Analyte	Control Limit	Sample (S) C	Duplicate(D) C	RPD	Q	м
Cation Exchange Capacity	20	11.740	11.600	1.2	-	WL

CLIENT SAMP ID

03050224-03ADUP

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Soil

Total/Diss.:

% Moisture for Sample:

Total

0.0

Lab Sample ID: 03050224-03

SDG No.: 03050225

Level: LOW

NA

% Solids for Duplicate:

Analyte	Control Limit	Sample (S) C	Duplicate(D) C	RPD	Q	М
Sodium Adsorption Ratio	20	0.800	0.800	0.0		WI

Concentration Units:

CLIENT SAMP ID

Lab Name:

SPL, Inc.

03050346-01ADUP

Lab Code:

SPLLAF

Lab Sample ID: 03050346-01

Matrix:

Soil

SDG No.: 03050225

Total/Diss.:

Total

Level: LOW

% Moisture for Sample:

0.0

Concentration Units:

mg/Kg

% Solids for Duplicate:

Analyte	Control Limit	Sample (S)	С	Duplicate(D)	С	RPD	Q	м
Barium	20	6300.00	00	6350.00	0	0.8		A

Lab Name: Lab Code:

SPL, Inc.

SPLLAF

SDG No.:

03050225

Total/Diss.:

Total

Solid LCS Source:

6010 S

Aqueous LCS Source:

			Aqueous	(ug/L)				Sol	id (mg/kg)		
Analyte	M	True	Found	%R	Limits	True	Found	С	%R	Limits	
Arsenic	Р					146.00	125.83		86.2	78.80	122.00
Barium	Р					140.00	116.28		83.1	77.90	122.00
Cadmium	Р					244.00	207.92		85.2	80.30	120.00
Chromium	Р					99.20	85.75		86.4	78.50	121.00
Lead	Р			-		72.80	59.84		82.2	79.90	120.00
Selenium	Р					86.50	74.59		86.2	69.10	131.00
Silver	Р					126.00	112.31		89.1	60.30	140.00
Zinc	P					138.00	111.26		80.6	77.50	122.00

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Total/Diss.:

Total

Solid LCS Source:

CECLCS

Aqueous LCS Source:

			Aqueous (ug/L)				So	id (mg/kg)			
Analyte	м	True	Found	%R	Limits	True	Found	С	%R	Limits	
Cation Exchange Capacity	WL					8.70	9.09		104.5	80.00	120.00

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Total/Diss.:

Total

Solid LCS Source:

MERCURY LCS

Aqueous LCS Source:

		Aqueous (ug/L)			Solid (mg/kg)						
Analyte	м	True	Found	%R	Limits	True	Found	С	%R	Limits	
Mercury	AV					8.31	8.75		105.3	61.90	138.00

06/27/03 13:33 FORM VII - IN

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Total/Diss.:

TCLP

Solid LCS Source:

TCLP LCS

Aqueous LCS Source:

			Aqueou	s (ug/L)				Sol	id (mg/kg)	
Analyte	M	True	Found	%R	Limits	True	Found	С	%R	Limits
Arsenic	Р	10000.0	9556.42	95.6	80 - 120					
Barium	P	10000.0	9433.83	94.3	80 - 120					
Cadmium	P	10000.0	9910.31	99.1	80 - 120					
Chromium	P	10000.0	9535.17	95.4	80 - 120					
Lead	P	10000.0	9251.74	92.5	80 - 120					
Selenium	P	10000.0	9878.00	98.8	80 - 120					
Silver	P	10000.0	9565.87	95.7	80 - 120			-	,	

06/27/03 13:37 FORM VII - IN

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Total/Diss.:

TCLP

Solid LCS Source:

MERCURY TCLP LCS

Aqueous LCS Source:

			Aqueous (ug/L)					Solid (mg/kg)		
Analyte	м	True	Found	%R	Limits	True	Found	С	%R	Limits
Mercury	AV	300.0	319.83	106.6	80 - 120					

# 10(A) METHOD DETECTION LIMITS

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Instrument ID Number:

ICP2

Date:

1/17/03

6010_TCLP

Analyte	Wave- length (nm)	Back- ground	PQL mg/L	MDL mg/L	м
Arsenic	206.84		0.2	0.0743	P
Barium	188.98		0.25	0.0417	P
Cadmium	233.53		0.1	0.017	P
Chromium	208.957		0.1	0.0185	P
Lead	315.89		0.2	0.0407	P
Selenium	228.616		0.2	0.083	P
Silver	324.754		0.1	0.0173	P

# 10(A) METHOD DETECTION LIMITS

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Instrument ID Number:

ICP2

Date:

10/16/02

6010_W

Analyte	length (nm)	Back- ground	PQL mg/Kg	MDL mg/Kg	М
Arsenic	188.98		2	1.173	P
Barium	233.53		1	0.167	P
Cadmium	228.78		1	0.0828	P
Chromium	267.72		1	0.109	P
Lead	220.35		1	0.398	P
Selenium	328.07		2	1.781	P
Silver	190.86		1	0.05	P
Zinc	213.86		2	0.778	Р

06/19/03 16:32

FORM X(A) - IN

# 10(A) METHOD DETECTION LIMITS

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Instrument ID Number:

FIMS-100

Date:

1/14/03

HG_S_7471

Analyte	Wave- length (nm)	Back- ground	PQL mg/Kg	MDL mg/Kg	М
Mercury	253.7		0.1	0.01101	AV

# 11B ICP INTERELEMENT CORRECTION (ANNUALLY)

 Lab Name:
 SPL Inc

 Lab Code:
 SPLLAF

 ICP ID #:
 ICP2

 Date:
 5/12/03

Analytes	Wavelength	Aluminum	Calcium	Iron	Magnesium
Aluminum	237.31	n/a	-0.525806	-4.39258	0
Arsenic	188.98	-0.054251	0	0.102699	0
Barium	233.53	0	-0.158574	0.471651	0
Calcium	315.89	0	n/a	3.62462	0
Cadmium	228.8	0	0	0	-0.0498989
Chromium	267.71	0	0.0865238	-0.255879	0
Iron	273.95	0	0	n/a	0
Lead	220.35	0	0	0.0973404	0
Magnesium	279.08	0	0	0	n/a
Selenium	196.03	0	0	0.2	0
Silver	328.07	0	0.0968283	0	0
Zinc	213.85	-0.192887	0.188144	0.51169	0.19721

6/27/03 2:54 PM FORM XIB-IN

# 12 ICP LINEAR RANGES

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

ICP ID Number: ICP2

Date:

08/14/02

Analyte	Time (Sec.)	Concentration ug/L	м
Arsenic	30.00	100000	Р
Barium	30.00	100000	Р
Cadmium	30.00	5000	Р
Chromium	30.00	50000	P
Lead	30.00	1000000	P
Selenium	30.00	200000	P
Silver	30.00	5000	Р
Zinc	30.00	10000	P

07/02/03 11:36

FORM XII - IN

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW3050B

Total/Diss.:

Lab Sample ID	Client Sample ID	Preparation Date	Initial Weight (gram)	Initial Volume (mL)	Final Volume (mL)
03050225-15	16-E-1003-T1-A	5/8/03	1.00	0	100
03050225-01	43-E-1001-P1-A	5/8/03	1.00	0	100
03050225-01	43-E-1001-P1-AMS	5/8/03	1.00	0	100
03050225-01	43-E-1001-P1-AMSD	5/8/03	1.00	0	100
CS-16353	LCSS	5/8/03	1.00	0	100
MBLK-16353	PBS	5/8/03	1.00		100

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW7471A

Total/Diss.:

Lab Sample ID	Client Sample ID	Preparation Date	Initial Weight (gram)	Initial Volume (mL)	Final Volume (mL)
03050027-07	03050027-07AMS	5/8/03	0.20	0	30
03050027-07	03050027-07AMSD	5/8/03	0.20	0	30
03050225-15	16-E-1003-T1-A	5/8/03	0.21	0	30
03050225-01	43-E-1001-P1-A	5/8/03	0.21	0	30
LCS-16342	LCSS	5/8/03	0.20	0	30
MBLK-16342	PBS	5/8/03	0.20		30

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW3010A

Total/Diss.:

Lab Sample ID	Client Sample ID	Preparation Date	Initial Weight (gram)	Initial Volume (mL)	Final Volume (mL)
03050225-15	16-E-1003-T1-A	5/15/03	0.00	10	50
03050225-15	16-E-1003-T1-AD	5/15/03		10	50
03050225-15	16-E-1003-T1-AMS	5/15/03	0.00	10	50
_CS-16576	LCS-16576	5/15/03	0.00	10	50
MBLK-16576	MBLK-16576	5/15/03		10	50

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW7470A

Total/Diss.:

Lab Sample ID	Client Sample ID	Preparation Date	Initial Weight (gram)	Initial Volume (mL)	Final Volume (mL)
03050225-15	16-E-1003-T1-A	5/16/03	0.00	1	30
03050225-15	16-E-1003-T1-AMS	5/16/03	0.00	1	30
03050225-15	16-E-1003-T1-AMSD	5/16/03	0.00	1	30
LCS-16593	LCSW	5/16/03	0.00	1	30
MBLK-16593	PBW	5/16/03		1	30

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW7080

Total/Diss.:

Lab Sample ID	Client Sample ID	Preparation Date	Initial Weight (gram)	Initial Volume (mL)	Final Volume (mL)
03050346-01	03050346-01ADUP	5/9/03	0.05	0	250
03050225-01	43-E-1001-P1-A	5/9/03	0.05	0	250

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

LA29B

Total/Diss.:

Lab Sample ID	Client Sample ID	Preparation Date	Initial Weight (gram)	Initial Volume (mL)	Final Volume (mL)
03050224-03	03050224-03ADUP	5/9/03	5.0	0	100
03050225-01	43-E-1001-P1-A	5/9/03	5.0	0	100

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

LA29B

Total/Diss.:

Lab Sample ID	Client Sample ID	Preparation Date	Initial Weight (gram)	Initial Volume (mL)	Final Volume (mL)
03050224-03	03050224-03ADUP	5/8/03	100	0	100
03050225-01	43-E-1001-P1-A	5/8/03	100	0	100

Lab Name: SPL, Inc. SDG No.: 03050225

 Lab Code:
 SPLLAF

 Method:
 SW9081

 Total/Diss.:
 Total

Lab Sample ID	Client Sample ID	Preparation Date	Initial We <del>i</del> ght (gram)	Initial Volume (mL)	Final Volume (mL)
03050224-03	03050224-03ADUP	5/9/03	5.0	0	100
03050225-01	43-E-1001-P1-A	5/9/03	5.0	0	100
LCS-16401	LCSS	5/9/03	5.0	0	100
MBLK-16401	PBS	5/9/03	5.0		100

Lab Name:

Start Date:

SPL. Inc.

SPLLAF

5/16/03

Lab Code:

Instrument ID Number:

ICP2

5/16/03 End Date:

03050225 SDG No.:

Method:

SW6010B

Total/Diss.:

TCLP

Lab	Client				1										Ar	nalyt	es													
Sample No.	Sample No.	D/F	Time	% R	A L	S B	A S	B A	B E	C D	C A	C R	0	C	F E	P B	M G	M N	M 0	H G	N I	K	S E	S N	S R	A G	N A	T	T L	٧
ICV	ICV	1	1010	0			Х	X		х		Х				X							X			х				
ICB	ICB	1	1020	0	$\top$		Х	Х		Х		Х				Х							X			Х				
ICSAI	ICSAI	1	1029	0			Х	Х	·	X		Х				Х		-					X			Х				
ICSABI	ICSABI	1	1038	0			Х	Х		Х		Х				Х							X			Х				
MBLK-16576	PBW	5	1106	0			Х	Х		X		Х				Х							X			Х				
LCS-16576	LCSW	5	1114	0			Х	Х		X		Х				Х							X			Х				
03050225-15	16-E-1003-T1-A	5	1124	0			Х	Х		Х		Х				Х							X			х				
03050225-15	16-E-1003-T1-ASD	25	1133	0			Х	Х		Х		Х				Х							X			X				
03050225-15	16-E-1003-T1-AMS	5	1142	0			Х	Х	1 12	X		Х				Х							X			X		- 5 10		
03050225-15	16-E-1003-T1-APDS	25	1151	0			Х	X		Х		Х				Х							X			Х				
CCV1	CCV1	1	1203	0			Х	Х	2-23	X		Х				Х	0						X			X		-12		
CCB1	CCB1	1	1215	0			Х	X		X		Х				Х							Х			Х				
03050225-15	16-E-1003-T1-AD	5	1225	0			Х	Х		Х		Х				Х							Х			X				
CCV2	CCV2	1	1254	0			Х	Х		Х		Х				Х							Х			Х				
CCB2	CCB2	1	1307	0			Х	Х		Х		Х				Х							Х			Х				
ICSAF	ICSAF	1	1314	0			Х	Х		X		X				Х							Х			X				
ICSABF	ICSABF	1	1326	0			X	X	97	X		Х				Х							X			X				

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW7471A

Instrument ID Number:

FIMS-100

Total/Diss.:

Total

Start Date:

5/8/03

End Date:

5/8/03

Lab	Client												A	naly	tes														
Sample No.	Sample No.	D/F	Time	% R	A L	1930	200	B C	33 8	C C	2 2	1 (6)	F E	P B	M G	M N	M 0	H G	N I	K	S E	S N	10000	A G	N A	T I	T L	V	1000 E-200
CV	ICV	0	1143	0			1	Ť										Х											t
СВ	ICB	0	1147	0						$\top$	1							Х											T
MBLK-16342	PBS	1	1150	0					T									Х											t
LCS-16342	LCSS	10	1153	0														Х	П										T
03050027-07	03050027-07AMS	1	1159	0														Х											T
03050027-07	03050027-07AMSD	1	1203	0						Т								Х											T
CCV1	CCV1	1	1222	0					T	T								Х											t
CCB1	CCB1	1	1225	0										1				Х											T
03050225-01	43-E-1001-P1-A	1	1238	0														Х											
03050225-15	16-E-1003-T1-A	1	1241	0														Х											Т
CCV2	CCV2	1	1251	0														Х											T
CCB2	CCB2	1	1254	0							T							Х											Т
CCV3	CCV3	1	1300	0														Х	П										F
CCB3	CCB3	1	1303	0														Х			ľ, ji								Г
CCV4	CCV4	0	1313	0														Х											T
CCB4	CCB4	0	1316	0					1									Х											

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW7470A

Instrument ID Number:

FIMS-100

Total/Diss.:

Total

Start Date:

5/16/03

End Date:

5/16/03

Lab	Client														Ar	nalyt	es													
Sample	Sample	D/F	Time	% R	Α	S	Α	В	В	С	С	С	С	С	F	Р	М	М	М	Н	N	K	S	S	S	Α	N	Т	Т	V
No.	No.				L	В	s	Α	E	D	Α	R	0	U	Ε	В	G	N	0	G	1		Ε	N	R	G	Α	1	L	
ICV	ICV	1	1358	0													2.0			х				Н						
ICB	ICB	1	1402	0																Х										
MBLK-16593	PBW	1	1405	0																Х										
LCS-16593	LCSW	1	1408	0																Х										
03050225-15	16-E-1003-T1-A	1	1411	0										5=1						Х										
03050225-15	16-E-1003-T1-AMS	1	1414	0																Х										
03050225-15	16-E-1003-T1-AMSD	1	1418	0																Х										
CCV1	CCV1	1	1437	0																Х										
CCB1	CCB1	1	1440	0																Х										

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW6010B

Instrument ID Number:

ICP2

Total/Diss.:

Total

Start Date:

5/9/03

End Date:

5/10/03

Lab	Client				1										Ar	nalyt	es													
Sample No.	Sample No.	D/F	Time	% R	A L	S B	A S	B A	B E	C D	C A	C R	0	C	F E	P B	M G	M N	M 0	H G	K	S E	S N	S R	A G	N A	T I	T L	V	1
ICV	ICV	1	1507	0	H		Х	Х		х		Х				Х						Х			Х					)
ICB	ICB	1	1520	0			X	X		X		Х				Х						X			Х					)
ICSA1	ICSA1	1	1531	0			Х	Х		Х		Х				Х						Х			Х					)
ICSAB1	ICSAB1	1	1543	0			X	X		X		Х				X						X			Х					)
MBLK-16353	PBS	1	1627	0			X	X		Х		Х				Х						Х			Х					>
LCS-16353	LCSS	1	1639	0			X	X		X		X				X						X			Χ					)
03050225-01	43-E-1001-P1-A	1	1650	0			Х			Χ		Х				X						Х			Х					)
03050225-01	43-E-1001-P1-ASD	5	1702	0			X	X		X		X				Х						Х			Х					)
03050225-01	43-E-1001-P1-AMS	1	1714	0			Х	Х		Х		Х				Х						Х			Χ					)
03050225-01	43-E-1001-P1-AMSD	1	1726	0			Х	Х		Х		Х				Х						Х			Х					)
CCV1	CCV1	1	1738	0			Х	Х		Х		Х				Х						Х			Х					)
CCB1	CCB1	1	1750	0			Х	X		Х		Х				Х						Х			Х					)
03050225-01	43-E-1001-P1-APDS	5	1802	0																										)
03050225-01	43-E-1001-P1-APDSD	5	1814	0																										)
03050225-15	16-E-1003-T1-A	1	1849	0			Х	Х		Х		Х				Х						Х			Х					Ť
CCV2	CCV2	1	1958	0			Х	Х		X		Х				X						Х			Х					)
CCB2	CCB2	1	2010	0			Х	Х		Х		Х				Х						Х			Х					)
CCV3	CCV3	1	2217	0			Х	X		Х		Х				Х						Х			Х					)
CCB3	CCB3	1	2229	0			Х	Х		Х		Х				Х						Х			Х					)
ICSA2	ICSA2	1	2241	0			Х	X		Х		Х				Х						Х			Х					)
ICSAB2	ICSAB2	1	2252	0			Х	X		Х		Х				Х						Х			Х					)
CCV4	CCV4	1	0037	0			X	X		X		X				X						Х			X					)
CCB4	CCB4	1	0049	0			Х	X		Х		Х				Х						Х			Х					)
CCV5	CCV5	1	0516	0	1		X	Х		Х		Х				X						Х			Х					)
CCB5	CCB5	1	0528	0			Х	Х		Х		Х				Х						Х			Х					)
CCV6	CCV6	1	0711	0			Х	X		Х		X				Х			$\vdash$			Х			Х					>
CCB6	CCB6	1	0723	0			Х	Х		Х		Х				Х						Х			Х					)
ICSA3	ICSA3	1	0735	0			Х	X		X		X				Х						Х		_	Х					)

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW6010B

Instrument ID Number:

ICP2

Total/Diss.:

Total

Start Date:

5/9/03

End Date:

5/10/03

Lab	Client														Ar	nalyt	es													
Sample	Sample	D/F	Time	% R	Α	S	Α	В	В	С	С	С	С	С	F	Р	М	М	М	Н	N	K	S	S	S	Α	N	Т	Т	٧
No.	No.				L	В	S	Α	E	D	Α	R	0	U	E	В	G	N	0	G	1		Ε	N	R	G	Α	1	L	
ICSAB3	ICSAB3	1	0746	0			Х	Х		Х		Х				Х		H		-			Х			Х			-	-

Lab Name:

SPL, Inc.

SDG No.: 03

03050225

Lab Code:

SPLLAF

Method:

SW6010B

Instrument ID Number:

ICP2

Total/Diss.:

TCLP

Start Date:

5/16/03

End Date:

5/16/03

Lab	Client														Ar	nalyt	es													
Sample No.	Sample No.	D/F	Time	% R	A L	S B	A S	B A	B E	C D	C A	C R	0	C	F E	P B	M G	M N	M 0	H G	N I	К	S E	S N	S R	A G	N A	T	T L	V
ICV	ICV	1	1010	0			х	Х		х		х				Х							Х			Х				
ICB	ICB	1	1020	0			Х	Х		Х		X				Х							X			X			= -2	
ICSAI	ICSAI	1	1029	0			Х	Х		Х		X				Х							X			Х				
ICSABI	ICSABI	1	1038	0			Х	Χ		Х		X				Х							X			X				
MBLK-16576	PBW	5	1106	0			Х	Х		X		Х				X							X			X				
LCS-16576	LCSW	5	1114	0			Х	Х		Х		Х				Х							Х			Х				
03050225-15	16-E-1003-T1-A	5	1124	0			Х	Х		Х		X				X							X			X				
03050225-15	16-E-1003-T1-ASD	25	1133	0			Х	Х		Х		Х		_		Х						9	Х			Х				
03050225-15	16-E-1003-T1-AMS	5	1142	0			Х	Х		X		X				Х							X			X				
03050225-15	16-E-1003-T1-APDS	25	1151	0			Х	Х		X		X				Х							X			X				
CCV1	CCV1	1	1203	0			Х	Х		Х		X				X							Х			X				
CCB1	CCB1	1	1215	0			Х	Х		X		Х				X		- 0					X			Х				
03050225-15	16-E-1003-T1-AD	5	1225	0			Х	Х		Х		Х				Х							X			X				
CCV2	CCV2	1	1254	0			Х	Х		X		X				X							X			Х				
CCB2	CCB2	1	1307	0			Х	Х		X		Х				Х							X			X			- 2	
ICSAF	ICSAF	1	1314	0			Х	Х		Х		Х				Х						g	Х			Х				
ICSABF	ICSABF	1	1326	0			Х	X		Х	=:.\	Х				Х							X			X				

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

Method:

SW7471A

Instrument ID Number:

FIMS-100

Total/Diss.:

Total

Start Date:

5/8/03

End Date:

5/8/03

Lab	Client														Ar	alyt	es													
Sample	Sample	D/F	Time	% R	A	S	Α	В	В	С	С	С	С	С	F	P	М	М			N	K					N	Т	Т	٧
No.	No.				L	В	S	Α	E	D	Α	R	0	U	Ε	В	G	N	0	G	Į.		E	N	R	G	A	l.	L	
ICV	ICV	0	1143	0						- 0										Х										
ICB	ICB	0	1147	0																Х										
MBLK-16342	PBS	1	1150	0																X										
LCS-16342	LCSS	10	1153	0																X										
03050027-07	03050027-07AMS	1	1159	0																X										
03050027-07	03050027-07AMSD	1	1203	0																X										
CCV1	CCV1	1	1222	0																Х										
CCB1	CCB1	1	1225	0																Х										
03050225-01	43-E-1001-P1-A	1	1238	0																X										
03050225-15	16-E-1003-T1-A	1	1241	0																Х										
CCV2	CCV2	1	1251	0																Х										
CCB2	CCB2	1	1254	0																Х										
CCV3	CCV3	1	1300	0																Х										
CCB3	ссвз	1	1303	0																Х										
CCV4	CCV4	0	1313	0																Х										
CCB4	CCB4	0	1316	0																Х										

#### COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No .:

03050225

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Matrix
43-E-1001-P1-A	03050225-01	05/02/03 12:15	05/05/03	Soil
43-E-1001-P1-B	03050225-02	05/02/03 12:15	05/05/03	Soil
41-E-1001-C1-A	03050225-03	05/02/03 15:30	05/05/03	Soil
43-E-1002-C1-B	03050225-04	05/02/03 13:45	05/05/03	Soil
43-E-1002-C1-A	03050225-05	05/02/03 13:45	05/05/03	Soil
43-E-1001-C1-A	03050225-06	05/02/03 12:45	05/05/03	Soil
43-E-1001-C1-B	03050225-07	05/02/03 12:45	05/05/03	Soil
16-E-1004-C1-A	03050225-08	05/03/03 11:15	05/05/03	Soil
16-E-1004-M1-A	03050225-09	05/03/03 12:35	05/05/03	Soil
16-E-1004-M1-B	03050225-10	05/03/03 12:35	05/05/03	Soil
16-E-1004-M2-A	03050225-11	05/03/03 13:15	05/05/03	Soil
DUPE-7	03050225-12	05/03/03 0:00	05/05/03	Soil
16-E-1004-0A1-A	03050225-13	05/03/03 12:15	05/05/03	Soil
16-E-1003-C1-B	03050225-14	05/03/03 8:20	05/05/03	Soil
16-E-1003-T1-A	03050225-15	05/03/03 9:00	05/05/03	Soil
16-E-1005-C1-A	03050225-16	05/03/03 13:55	05/05/03	Soil
16-E-1004-0A1-B	03050225-17	05/03/03 12:15	05/05/03	Soil
16-E-1003-C1-A	03050225-18	05/03/03 8:20	05/05/03	Soil

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature

Signature:

Date:

Name:

Title:

06/27/03 16:00

**COVER PAGE - IN** 

CLIENT SAMP ID

43-E-1001-P1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Matrix:

SOIL

Lab Sample ID:

03050225-01A

Level:

LOW

Date Collected:

5/2/03

% Moisture:

0.0

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.088		0.01		GR	%	5/13/03

CLIENT SAMP ID

43-E-1001-P1-B

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Matrix:

SOIL

Lab Sample ID:

03050225-02A

Level:

LOW

Date Collected:

5/2/03

% Moisture:

0.0

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.17		0.01		GR	%	5/13/03

CLIENT SAMP ID

41-E-1001-C1-A

Lab Name:

SPL, Inc.

Lab Code:

Matrix

SPLLAF

SOIL

SC

Level:

% Moisture:

LOW

0.0

SDG No.:

10.;

03050225

Lab Sample ID:

03050225-03A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	м	Units	Date Analyzed
	Oil & Grease	0.29		0.01		GR	%	5/13/03

CLIENT SAMP ID

43-E-1002-C1-B

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOIL

Matrix: Level:

LOW

% Moisture:

0.0

SDG No.: 03050225

Lab Sample ID:

03050225-04A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.078		0.01		GR	%	5/13/03

CLIENT SAMP ID

43-E-1002-C1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOIL

Matrix: Level:

LOW

0.0

% Moisture:

SDG No.:

03050225

Lab Sample ID:

03050225-05A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.18		0.01		GR	%	5/13/03

CLIENT SAMP ID

43-E-1001-C1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOIL

Level:

Matrix:

LOW

% Moisture: 0.0

SDG No.:

03050225

Lab Sample ID:

03050225-06A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	2.8		0.01		GR	%	5/13/03

CLIENT SAMP ID

43-E-1001-C1-B

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOIL

Level:

Matrix:

LOW

0.0 % Moisture:

SDG No.:

03050225

Lab Sample ID:

03050225-07A

Date Collected:

5/2/03

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.12		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1004-C1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Matrix:

SOIL

Lab Sample ID:

03050225-08A

Level:

LOW

Date Collected:

5/3/03

% Moisture:

CAS No.	Analyte	Conc.	С	PQL	Q	м	Units	Date Analyzed
	Oil & Grease	0.53		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1004-M1-A

Lab Name:

SPL, Inc.

Lab Code:

Matrix:

Level:

SPLLAF

SOIL

LOW

0.0

% Moisture:

SDG No.:

03050225

Lab Sample ID:

03050225-09A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.20		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1004-M1-B

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Matrix:

SOIL

Lab Sample ID:

03050225-10A

Level:

LOW

Date Collected:

5/3/03

% Moisture:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.072		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1004-M2-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOIL

Matrix: Level:

% Moisture:

LOW 0.0

Lab Sample ID:

SDG No .:

03050225-11A

Date Collected:

5/3/03

03050225

CAS No. Analyte C PQL Conc. M Units Q Date Analyzed Oil & Grease 0.039 0.01 GR % 5/13/03

CLIENT SAMP ID

DUPE-7

Lab Name:

SPL, Inc.

Lab Code:

**SPLLAF** 

Matrix:

0011

SOIL

Level:

LOW

% Moisture: 0.0

SDG No.:

03050225

Lab Sample ID:

03050225-12A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.65		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1004-0A1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

SOIL

Level:

LOW

0.0

% Moisture:

SDG No.:

03050225

Lab Sample ID:

03050225-13A

Date Collected:

CAS No.	Analyte	Cono	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	7.4		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1003-C1-B

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

SOIL

Level:

LOW

% Moisture: 0.0

SDG No.:

03050225

Lab Sample ID:

03050225-14A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.22		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1003-T1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Level:

% Moisture:

SOIL

LOW 0.0

SDG No.:

03050225

Lab Sample ID:

03050225-15A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	15.4		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1005-C1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Level:

SOIL

LOW

% Moisture: 0.0 SDG No .:

03050225

Lab Sample ID:

03050225-16A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.11		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1004-0A1-B

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

SOIL

Level:

LOW

% Moisture: 0.0

SDG No.:

03050225

Lab Sample ID:

03050225-17A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	м	Units	Date Analyzed
	Oil & Grease	0.64		0.01		GR	%	5/13/03

CLIENT SAMP ID

16-E-1003-C1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

SOIL

Level;

LOW

% Moisture: 0.0

SDG No.:

03050225

Lab Sample ID:

03050225-18A

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	1.7		0.01		GR	%	5/13/03

CLIENT SAMP ID

PBS

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

....

SOIL

Level:

Matrix:

LOW

% Moisture: 0.0

SDG No.:

03050225

Lab Sample ID:

**MBLK** 

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.010	U	0.01		GR	%	5/13/03

CLIENT SAMP ID

PBS

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

----

SOIL

Level:

Matrix:

LOW

% Moisture: 0.0

SDG No.:

03050225

Lab Sample ID:

MBLK-R47814

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Oil & Grease	0.010	U	0.01		GR	%	5/13/03

CLIENT SAMP ID

43-E-1001-P1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOIL

Matrix: Level:

LOW

0.0

% Moisture:

SDG No.:

03050225

Lab Sample ID:

03050225-01A

Date Collected:

5/2/03

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
000010-29-7	pН	7.3		1		PH	Std Units	5/12/03

CLIENT SAMP ID

16-E-1003-T1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOIL

Matrix: Level:

LOW

0.0

% Moisture:

OI E, IIIO.

SDG No.:

03050225

Lab Sample ID:

03050225-15D

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
000010-29-7	рН	7.4		1		PH	Std Units	5/12/03

CLIENT SAMP ID

43-E-1001-P1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOIL

Level:

Matrix:

LOW

% Moisture: 0.0 SDG No.:

03050225

Lab Sample ID:

03050225-01A

Date Collected:

5/2/03

CAS No.	Analyte	Conc.	С	PQL	Q	м	Units	Date Analyzed
	Specific Conductance	0.79		0.01		WL	mmhos/c	5/9/03

CLIENT SAMP ID

16-E-1003-T1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Level:

SOIL

LOW

% Moisture: 0.0

OT E, IIIO.

SDG No.:

03050225

Lab Sample ID:

03050225-15D

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
57-12-5	Reactive Cyanide	0.20	U	1		CA	mg/Kg	5/14/03

CLIENT SAMP ID

PBS

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SOLID

Level:

Matrix:

LOW

% Moisture:

0.0

SDG No.:

03050225

Lab Sample ID:

MBLK-R47767

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
57-12-5	Reactive Cyanide	0.20	U	1		CA	mg/Kg	5/14/03

CLIENT SAMP ID

16-E-1003-T1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

256676779

SOIL

Matrix: Level;

LOW

% Moisture: 0.0

SDG No.:

03050225

Lab Sample ID:

03050225-15D

Date Collected:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Ignitability	0				WL	°F	5/14/03

CLIENT SAMP ID

PBW

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

LLAF

SDG No.:

03050225

Matrix:

LIQUID

Lab Sample ID:

MBLK-R47811

Level:

LOW

Date Collected:

% Moisture:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
	Ignitability	0				WL	°F	5/14/03

CLIENT SAMP ID

16-E-1003-T1-A

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Matrix:

SOIL

Lab Sample ID:

03050225-15D

Level:

LOW

Date Collected:

5/3/03

% Moisture:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
18496-25-8	Reactive Sulfide	8.5	U	8.5		CA	mg/Kg	5/14/03

CLIENT SAMP ID

PBS

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

SDG No.:

03050225

Matrix:

SOLID

Lab Sample ID:

MBLK-R47766

Level:

LOW

Date Collected:

% Moisture:

CAS No.	Analyte	Conc.	С	PQL	Q	М	Units	Date Analyzed
18496-25-8	Reactive Sulfide	8.5	U	8.5		CA	mg/Kg	5/14/03

#### 2A Initial Calibration Verification

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: ICV

Analysis Date: 05/14/03 9:00

Sample Type: ICV

Run ID:

DR3000 030514A-701701

Concentration Units: ug/L

Analyte	True	Found	%R	м	533	QC. MITS HIGH
Reactive Cyanide	100	100	100	CA	90	110

# 2A Continuing Calibration Verification

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV1

Analysis Date: 05/14/03 9:00

Sample Type: CCV

Run ID:

DR3000 030514A-701709

Concentration Units: ug/L

						QC. MITS
Analyte	True	Found	%R	M	LOW	HIGH
Reactive Cyanide	300	291	97.0	CA	90	110

#### 2A Continuing Calibration Verification

Lab Name:

SPL, Inc.

SDG No.: 03050225

Lab Code:

SPLLAF

Lab Sample ID: CCV

Analysis Date: 05/14/03 13:00

Sample Type: CCV

Run ID:

WET 030514F-702292

Concentration Units: *F

Analyte					QC. LIMITS		
	True	Found	%R	М	LOW	HIGH	
gnitability	81.00	81.0000	100.0	WL	80	82	

CLIENT SAMP ID

SPL, Inc.

03050346-01ADUP

Lab Code:

Lab Name:

SPLLAF

Lab Sample ID: 03050346-01ADUP

Matrix:

Soil

SDG No.: 03050225

Percent Solids for Duplicate: 0

Analyte	Control Limit	Sample (S)	С	Duplicate(D)	С	RPD	Q	м	Units
Oil & Grease	20	0.5	4	0.5	4	0.4		GR	%

CLIENT SAMP ID

16-E-1004-M1-AD

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Soil

Percent Solids for Duplicate: 0

Lab Sample ID: 03050225-09ADUP

SDG No.: 03050225

Analyte	Control Limit	Sample (S)	С	Duplicate(D)	С	RPD	Q	М	Units
Oil & Grease	20	0.2	0	0.1	9	5.5		GR	%

CLIENT SAMP ID

43-E-1001-P1-AD

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Soil

Lab Sample ID: 03050225-01ADUP

SDG No.: 03050225

Analyte	Control Limit	Sample (S)	С	Duplicate(D)	С	RPD	Q	м	Units
pH	0.7	7.	3	7	.4	0.3		РН	Std Units

CLIENT SAMP ID

16-E-1003-T1-AD

Lab Name:

SPL, Inc.

Lab Sample ID: 03050225-15DDUP

Lab Code:

SPLLAF

SDG No.: 03050225

Matrix:

Liquid

Percent Solids for Duplicate: NA

Analyte	Control Limit	Sample (S) C	Duplicate(D)	С	RPD	Q	м	Units
Ignitability	20	0		0	0.0		WL	°F

CLIENT SAMP ID

16-E-1003-T1-AD

Lab Name:

SPL, Inc.

Lab Code:

SPLLAF

Matrix:

Solid

Percent Solids for Duplicate: 0

Lab Sample ID: 03050225-15DDUP

SDG No.: 03050225

Analyte	Control Limit	Sample (S)	С	Duplicate(D)	С	RPD	Q	М	Units
Reactive Cyanide	20	0.20	U	0.20	U	0.0		CA	mg/Kg
Reactive Sulfide	20	8.5	U	8.5	U	0.0		CA	mg/Kg

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LCS ID:

LCS

Analyte	SPIKE ADDED	LCS CONCENTRATION	LCS %		Q LIM		
	%	%	REC	Q	LOW	HIGH	М
Oil & Grease	0.10	0.0940	94.0		80	120	GR

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LCS ID:

LCS-R47814

Analyte	SPIKE ADDED	LCS CONCENTRATION	LCS %		5400	QC. LIMITS	
	%	%	REC	Q	LOW	HIGH	М
Oil & Grease	0.10	0.0930	93.0		80	120	GR

Lab Name:

SPL, Inc.

SDG No.:

03050346

Lab Code:

SPLLAF

LCS ID:

LCS

Analyte	SPIKE	LCS	LCS			C.	
	ADDED	CONCENTRATION	%		LIN		
	Std units	Std units	REC	Q	LOW	HIGH	M
pН	10.00	10.00	100.0		99.8	100.2	GR

Lab Name:

SPL, Inc.

SDG No.:

03050225

Lab Code:

SPLLAF

LCS ID:

LCS-R47811

Analyte	SPIKE ADDED	LCS CONCENTRATION	LCS %		Q LIM	C. IITS		
	°F	°F	REC	Q	LOW	HIGH	М	
Ignitability	81.00	80.0000	98.8		98.765	101.23	WL	

EPA No.: 16-E-1003 FPN: E03612

# APPENDIX 16 RECORDS OF COMMUNICATION

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

## Farrell, Justin

From: Farrell, Justin

Sent: Wednesday, July 02, 2003 5:24 PM

To: 'Tony.Roberson@swd02.usace.army.mil'; 'Joe.H.McCoy@swf02.usace.army.mil';

'Michael.L.Keen@swf02.usace.army.mil'; 'cooper.wally@epamail.epa.gov' Myers, Julian; Dellinger, James; 'Dana.Beck@westonsolutions.com'; 'robertg@dnr.state.la.us'; 'doylej@dnr.state.la,us'; Beeson, David

Subject: ***Update*** FPN E03612 Trans Gulf Petroleum - Varner facility

All,

Cc:

When inquiring to LDNR Bob Gray about the new operators on the soon-to-be active Westek facilities (3615) and 3616), the subject of removal operations on the above facility came up. LDNR is planning on doing some removal/P&A work in the vicinity of 3612 and inquired about the timeframe for USACE/USEPA removal actions and whether the facility could be included into their bid package. As you may know, presently the facility ranks as a substantial threat based on initial assessment of the tank battery located on Powell land (written access agreement), with two wells and two LDNR registered pits being located on Valure land (only verbal access). Obtaining a written access agreement to the Valure property for the purposes of sampling the two LDNR pits has been problematic to date. As it turns out, not including those LDNR pits in the current bid package is also slightly problematic for LDNR from an administrative standpoint. Through conversations with LDNR Bob Gray and USEPA Wally Cooper the following compromise was reached. Since the facility ranks as a substantial threat based on the tank battery, USACE/USEPA will take the removal lead for the bulk of the facility (Powell property: SN 152795, tank battery, and secondary containment), while LDNR will take the lead on the P&Aing remaining two wells (SN 152863 and SN 194686) and closure of the two LDNR pits located on the Valure property. This saves USACE/USEPA from distributing an Administrative Order for access to the Valure property, the additional mobilization costs of sampling of the two pits (No free/dead oil or sheen was noted), and will allow for final reporting to proceed more rapidly.

Please direct any questions or comments to myself at (225)298-5098 or Jim Dellinger at (225)298-5105.

Sincerely, Justin Farrell Environmental Scientist ecology and environment, inc. 11550 Newcastle Ave. Ste. 250 Baton Rouge, LA 70816

Tel: (225)298-5080 Fax: (225)298-5081 Email: jfarrell@ene.com

www.ene.com

EPA No.: 16-E-1003 FPN: E03612

# **APPENDIX 17**

# INTERIM DELIVERABLES

16E1003.pdf Contract: DACW5602G1001

Task No.: 003

#### Beeson, David

From: Farrell, Justin

Sent: Friday, March 21, 2003 3:32 PM

To: 'Tony.Roberson@swd02.usace.army.mil'; 'Michael.L.Keen@swf02.usace.army.mil';

'cooper.wally@epamail.epa.gov'

Dellinger, James; Beeson, David; Bordelon, Amanda; Farrar, Will; Myers, Julian Cc:

Subject: 1st Quarter 03 North OPA POLREPS for week ending 3/22

#### All,

Please find enclosed in this email a link to the Extranet OPA site, which will take you to all the necessary components that comprise the POLREPS (including FDS and selected photos). Please log on and access information through subject folders (1st Q 03 North\POLREPS). This is being done because the field data sheets are very large files and it was not our intention to overburden your respective email Inbox. The OPA extranet website can be accessed as follows:

- 1. Open Internet Explorer 4.0 or higher;
- 2. On address line delete anything and type ftp.ene.com/opa
- 3. Use the generic log on account:

Username:(b) (6)

Password:

For ease in distribution and viewing however, the completed POLREP for the week ending 3/22 are attached below. If you have any questions on the specific information referenced here, or any generic comments regarding format, please contact either myself at (225) 298-5098 or David Beeson at (214) 245-1000. Thank you for the continued opportunity to serve you.

Kindest Personal Regards,

Justin Farrell

For David Beeson, Project Manager





E03610_09E1049_PE03612_16E1003_P OLREP_1.doc OLREP_1.doc

Justin E. Farrell **Environmental Scientist** ecology and environment, inc. 11550 Newcastle Ave. Ste. 250 Baton Rouge, LA 70816

Tel: (225)298-5080 Fax: (225)298-5081 Email: jfarrell@ene.com

www.ene.com

#### DRAFT POLREP No. 1

## I. Heading

Date: Friday, March 21, 2003

Subject: Trans - Gulf Petroleum Corp. - Varner

From: OSC Wally Cooper, U. S. EPA Region VI

To: Director, ERD

Charles A. Gazda, Chief, RPB Region VI

#### II. Background

Site ID No.: N/A

FPN: E03612

CERCLIS No.: N/A

Delivery Order No.: N/A

Response Authority: OPA ERNS No.: N/A

NPL Status: non-NPL Action Lead: OSLTF

State Notification: LOSCO, LDNR Start Date: February 11, 2003

Incident Category: Abandoned Completion Date: N/A

**ISAP Status: N/A** 

#### III. Situation Information

A. Incident Category: Abandoned Oil Production Facility

#### 1. Site Location

Facility 16-E-1003 (JOP ID number) was referred to EPA in February of 2003 by the State of Louisiana to be considered for OPA response actions. This facility is identified as the Trans - Gulf Petroleum Corp. – Varner abandoned oil production facility and is located in Section 34, Township 12 North, Range 11 West, of Desoto Parish, Louisiana, at Latitude 31° 59' 29" N and Longitude 93° 27' 57" W. The facility was visited on February 18, 2003 and on-site observations were made at that time. Access to the facility was coordinated with Louisiana Department of Natural Resources (LDNR) Conservation Enforcement Specialist Buddy Bufkin. Attempts are underway to gain landowner access to complete assessment activities, including sampling as necessary.

The Trans-Gulf Petroleum Corp. – Varner abandoned oil production facility is located on approximately 50 acres in the Red River Bull Bayou Oil and Gas Field, 8.4 miles west southwest of the town of Coushatta, Desoto Parish, Louisiana. Approximately 5 residences are located within a one-mile radius of the facility. The facility is accessed from the northeast off of Ranch Road. There are no security features that restrict access to the tank battery and SN 152795, however a closed, unlocked ranch gate deters access to SN 152863 and SN 194686.

The facility consists of two above ground storage tanks (AST), one secondary containment basin, two pits, and three oil production wells. Two 210-barrel (bbl), welded steel ASTs, identified as AST1 and AST2 are situated within a 69-foot by 24-foot earthen berm secondary containment basin, identified as CONT1. The facility serviced three production wells, including: the Varner Well No. 001 (SN 152795), Varner Well No. 002 (SN 152863), and Varner Well No. 003 (SN 194686). All of the wells are listed as orphaned by the Louisiana Department of Natural

Resources (LDNR). Two pits were identified as associated with this facility. A 30-foot diameter reserve pit, identified as PIT1 (LDNR Pit ID 16P419), was located directly 30 feet to the west of SN 152863. A 40 by 10 foot reserve pit, identified as PIT2 (LDNR Pit ID 16P418), was also located directly west southwest of SN 152863.

Based on gauging, the following volumes of non-hazardous oilfield waste (NOW) are estimated to be present at the facility. The containers AST1 and AST2 currently contain approximately 205 bbl of oil and oily solids. The Louisiana Department of Environmental Quality (LDEQ) Hazardous Waste Division investigated the operator of this facility for his actions at a separate, nearby facility, 16-E-1002, and determined that, based on sample analysis of the contents of containers at the facility, the operator had illegally stored waste oil at that facility. Therefore the potential exists for the ASTs associated with this facility to also contain off-specification used oil. The contents of the containers will be sampled and analyzed for Resource Conservation and Recovery Act (RCRA) characteristic components to ensure that the facility can be addressed under OPA.

## 2. Description of Threat

Drainage from the facility flows to the southwest for 100 feet to Dolet Bayou. Dolet Bayou flows into Jims River, thence Bayou Pierre, and into the Red River. The Red River is "navigable" in fact and subject to interstate commerce. There are no known surface water intakes located for fifty miles down gradient from the site. There is trash in the containment basin and animal burrows which compromise the containment's berm. Threatened and Endangered species potentially located within the parish include the Bald Eagle.

The facility is considered to pose a substantial threat of release due to the 205 bbl of oil and oily solids remaining inside the facility's containers and the 3 abandoned wells associated with this facility. Also, there is an unknown volume of oil-impacted soil present in the basin and pits at the facility. Most of the accessible wells were observed to be corroded and since the facility is abandoned and receives no maintenance, the threat of release of oil is substantial.

# **B.** Response Information:

#### 1. Current Situation

EPA has conducted a preliminary site assessment and documented the conditions described above. All indications are that the site meets the basic criteria for Oil Pollution Act response action.

#### 2. Removal Activities to Date

Activities to date are the previous State enforcement actions and the current EPA assessment action.

#### 3. Enforcement

All previous enforcement efforts by LDNR have produced no timely or technically appropriate responsible party actions, as evident by the current conditions at the facility. The wells

previously identified in this report as associated with this facility and documented by LDNR as abandoned include: the Varner No. 001, (SN 152795); the Varner No. 002, (SN 152863); the Varner No. 003, (SN 194686). LDNR records indicate that Trans-Gulf Petroleum Corp. (Operator code 6040) was the last operator of these wells.

EPA will formally offer the responsible party (RP) the opportunity to conduct the necessary mitigation actions to abate any potential sources of release at the site. If the RP declines to participate, or fails to timely respond to notice, EPA plans to proceed with an OSLTF financed cleanup action. The RP is clearly advised via the notice procedure they may be subsequently held liable for the cost of government funded cleanup actions.

#### 4. Planned Removal Activities

POLREP No. 2 will advise of RP actions, and the EPA OSC intentions for this abandoned facility.

#### IV. Key Issues

No key issues.

#### V. Cost Information

Costs are currently limited to the assessment action.

#### VI. Attachments

Attached photographs (in jpg format) include images associated with the assessment of the Trans - Gulf Petroleum Corp. - Varner Abandoned Oil Production Facility. In addition, the draft Ground Truth Survey Field Data Sheet is provided in pdf format (Adobe Reader) to supply additional details of the preliminary assessment.

DRAFT_16E1003_GTSFDS.pdf
E03612_16E1003_0101.JPG
E03612_16E1003_0102.JPG
E03612_16E1003_0107.JPG

OSC: Wally Cooper USACE: Mike Keen

FPN: EØ3612

JOP ID: 16-E-1003

# Louisiana Abandoned Oil Facility Assessment JOP Ground-Truth Survey Field Data Sheet

E&E Survey 2 [18 [ Z ⁰ ] Date(s):	Members Attending:		L JW	nes Pa	TRICK 30	it, nazuh	istin farrell (e; e
LOSCO ID(s):			LDNR II	O(s):			
Latitude:	Longitude:		GPS	Sec/T/R:			Size (in acres):
31° 59'29.0"	93°27′57	1.0"	Diff	34/12N/11W			
	DOP						
Facility Name: Trans-	Gul F Petrole	cum Co	orp	· Varno	25	Jurisdict	ional Zone:
Oil Field Name: Red	River Bull a	3ayou	(76	51)			
Quad Map (name and numb	ber): Evelyn	(310	93H	4)			
Operator (name, telephone number, and address):  Train 5-GulF Petroleum Corp  (Landowner (name, telephone number, and address):  Donny Powell  (Landowner (name, telephone number, and address):  Donny Powell  (Landowner (name, telephone number, and address):  Train 5-GulF Petroleum Corp  (Landowner (name, telephone number, and address):  TRA  Access coordination:  LANR Buddy BufKin							
Number of anticipated comp		not locai	ted):				
Containers: 2-210 bol stock Wells: 3 w						,	
Containments: Pits: 2 pits					10'x 24'	10P4	-18 H9
Other:							

h-v/	· <b>V</b>
FPN: EØ3612	JOP ID: 16E 1003
Nearest City (name, direction and distance):  Town of Courtaits in located a	pproximately 12 miles east-northeast
Directions to Site (by land or water from nearest main road From the City of Dhreve port head east on I with Interstate 49 (I-49). Take a reach the intersection of I-49 and USI head east for approximately 3 mile LA Hur 510 and head south for approximately 10 and head south for approximately 10 and head south from and proceed down Ranch Road and or morthwest of Ranch Road.	and/or waterway): Interstate 20 until you neach the intersection right on I-49 and head south until you Hury 84. Take a left on US Hury 84 and a. At this point you take a right on mately 8 miles. These will be a dirt access on LA Hury 519 at this point. Take a right of the facility is located to the right
Is facility over water? Yes No	Is water impacted? Yes No
Distance from facility to known surface water or drainage	국 /00 feet. miles
	Waterway: protest of continue into DOLET BAYOU thence into DoleT BAYOU thence into part Bayon Pierre, which flows into Bayon Pierre, which flows into and subject in fact "and su
Nearest downstream waterway (Name, direction, and distance	notely 34 miles east of the facility
Doler Barjon is located appropri	markly of mile: with of the factory
Nearest Drinking Water Source or Inlet. (name, direction and No witake w/n 50 miles) The facility	_

Cory thompson

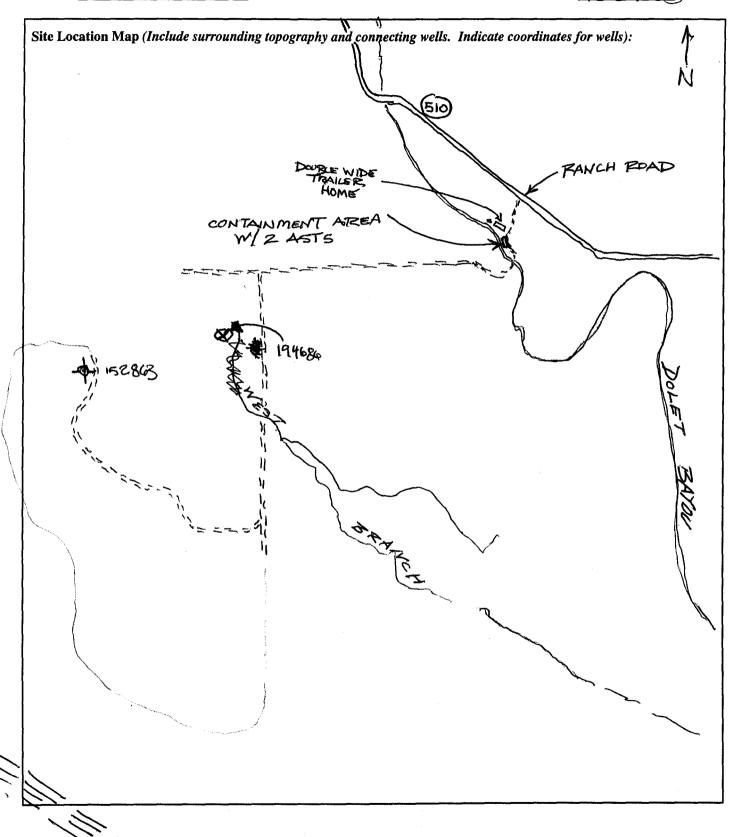
How many residents located within a 1-mile radius of the site:

GIS Reviewer(s)(Initial reviewed components):

EDNI.	036	12	
rpin:	$\frac{COU}{C}$	10	

JOP ID: 16-E-1003

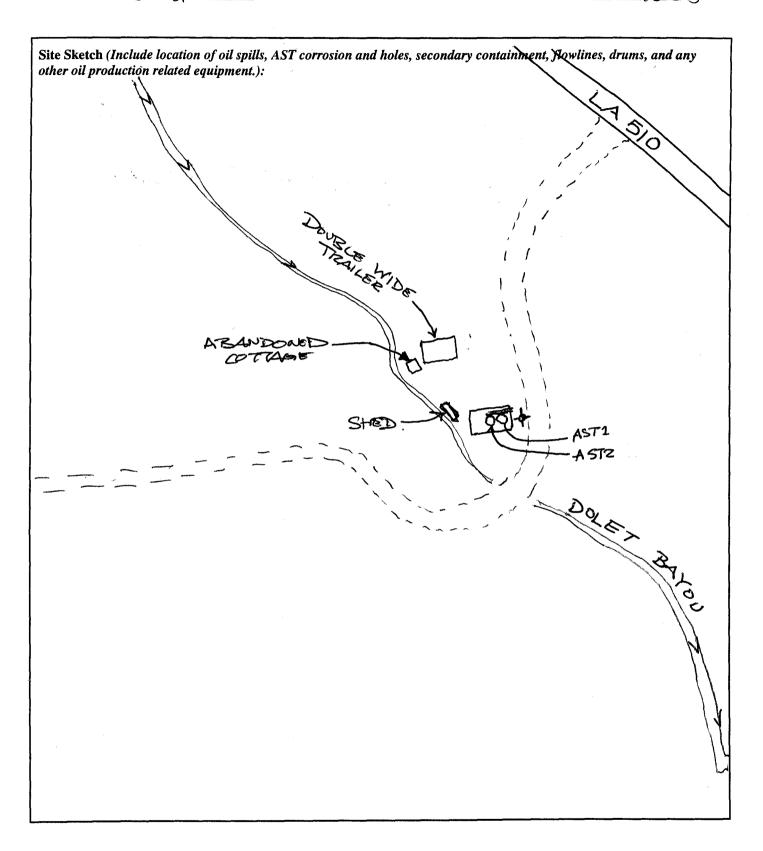
Type and Condition of S	Security Features (i.e., fence	e, signs, gates): NONE	
Describe Surrounding F	Property (all directions):		
N: "RESIDENTIA	L - ONE DOUBLE	F WIDE TRAILER W ABAI	uzoned House,
S: LIGHT WOOD E: CTOOP HEL	5 4 FIELDS	UNDED BY/LINE WITH T	/27.164
W: THE BAYOU	) (DOLET) SURRE	PONDED BY/THE MITH A	KEES/ BICOSH (
Are There Visible Signs	of Human or Wildlife Acces	SS to the Site?  NOMENT ATREA (CONT-1)	
TRASH DE	BRIS IN CONTAIN	11 TEIRM	),
ANIMAL BL	SKIZONS IN CON		
Pagammandations (note	"SDCC to all agricultural d		
	secciype equipment as	eficiencies, removal potential, etc.)	
won stop			
			}
	D. I		WAR AND COME
	Kelease (material spilled, ca resent or immanent (NRC 1-	tuse, area impacted, estimated quantity) - No -800-424-8802):	otify NRC/State/USCG
Equipment Utilized:			
Equipment Name	Serial Number	Background Reading(s)	Background Location (note location on sketch)
Ludlum	180310	5 uR/hr	_
MSA Passport	C5-39833	01/ LEL /20.8 02/ 0 H2S/ 0 CO	
FID	CZ-EM-209	& ppm	near Powell resider



Page 4 of 15

FPN: E03612

JOP ID: 16-E-1003



Additional Comments: (Document conversations with residents, LDNR, etc)

Spoke my Donny Powell (landowner upon which the TB & SN ____ sit). Mr. Powell

operated the wells for the operators (vanderlay?)

oluving the early 1980s. The landowner stated

that the operator dumped a non E&P oil

oily substance not originating for from the

wells. DEQ conducted an investigation of an

associated site (same operator) with similar

claims & determined the substance to be

a non specific waste oil (non NOW).

to thought to be of sign

LDNR Buddy Bufkin accompanied USACE

contractors on-site for purposes of assess—

ment

Photole Camer		Serial No.	, model)	):	
Date	Time	Roll/ Frame	Dir.	Description	P/W
2/18/03	INE 11700	VI	ENE	WELL SN 152863	
वे।श्रेष्ठ	17:05	1/2	SW	PIT 1 (LONR PIT ID	
विश्विष्ट	1706	1/3		PIT2 (LONR PIT ID)	
419/03	(8%)	14	SW	WELL W/ SWAB RIG	
2)19/3	(802	1/5	S	CLOSE UP OF WISCL SNI	
2/17/05	1804	1/4	E	DRUM WEST OF WELL,	
2/19/07	1806	77	NN	TANK BATTERCY	
2/17/03	18124	1/8	NM		
			·		

Well Status Table:							
Weil Status Table:   Complete for each well							
Well Name and Number:							
Varne	>r - 662   Lalitude:						
Serial Number: 152863	Latitude: 3/-59-71.3	Longitude: 93-28-44,2	DOP:				
Well Status: pen Casing	31-59-20.3 Condition: Rusted-Corr.	93-28-44.2 Terrain: Upland					
Is Oil Leaking? Y/N If Yes, Des	cribe:	,					
Well Association:	Grade:	Elevation (inches):					
LANR	Above	15"					
NORMAir Monitoring:							
hudlum =	7 MR/hr						
Comments (describe well, pumping un							
PJU present / di	sconnected						
or mejay stund							
Well Name and Number: Varner	\$\dot{0}.3						
Serial Number: 194686	Latitude: 31-59-23,4	Longitude: 93-28-27.3	DOP:				
Well Status: open Casing	Condition: Corroded	Longitude: 93-28-27.3 Terrain: Upland					
Is Qil Leaking? Yes / If Yes, Des	cribe:						
(No)							
Well Association:	Grade: 1/1	Elevation (inches):	· · · · · · · · · · · · · · · · · · ·				
LONR/Flow	Above	18"					
NORM/Air Monitoring:							
Ludlum = 11 uR/hr							
Comments (describe well, pumping un	it attached, etc.):	0 0					
surounded by veg	etation; value busies	I under ground; flowl	ine				
surrounded by vegetation; valve busied under ground; flowline to E. @ 10'							
	1011	traction					
approx 150, W.	of field road along of main field road	(recline					

Well Status: Disconnected, Capped, Open Casing, Flowing, Not Flowing-Connected, Undetermined, and Not Located.

Condition: Corroded, Leaking, Seeping, Pool Around, Previous Signs of Leakage, Associated Pipe Leaking, and Associated Pipe Seeping.

Terrain: Upland, Lowland, Marsh, and Water.

Well Association: Tank battery signs, Verbal-Field Personnel, Proximity, Flow line (Visible), Flow line (Gradeometer), Flow line (Semi-

Submerged)

Grade: Above, At, Below, Unknown

FPN:	<b>≡</b> Φ36	12
------	--------------	----

JOP ID: 16E-1003

Well Status Table:							
Complete for each well							
Well Name and Number:	1- 001						
Serial Number: 152795	Latitude: N 31° 59′ 29.6″	Longitude: W93° 27'56.6°	DOP:				
Well Status: SEE BELOW	Condition:	Terrain: HIGHLAND					
Is Oil Leaking? Y/N If Yes, Desc	cribe: NA						
Well Association:	Grade:	Elevation (inches):					
NORM/Air Monitoring:  NOTZM: 7 MZ/	HR	,					
Comments (describe well, pumping unit attached, etc.):  NOTE: A TRUCK MOUNTED SPARGING RIG IS ATTACHED TO THE WELL (SEE THOTO).  NO SIGNS OF LEAKING OR "SWAB"							
Well Name and Number:							
Serial Number:	Latitude:	Longitude:	DOP:				
Well Status:	Condition:	Terrain:					
Is Oil Leaking? Yes / If Yes, Desc No	ribe:						
Well Association:	Elevation (inches):						
NORM/Air Monitoring:							
Comments (describe well, pumping unit attached, etc.):							

Well Status: Disconnected, Capped, Open Casing, Flowing, Not Flowing-Connected, Undetermined, and Not Located. Condition: Corroded, Leaking, Seeping, Pool Around, Previous Signs of Leakage, Associated Pipe Leaking, and Associated Pipe Seeping. Terrain: Upland, Lowland, Marsh, and Water.

Well Association: Tank battery signs, Verbal-Field Personnel, Proximity, Flow line (Visible), Flow line (Gradeometer), Flow line (Semi-

Submerged)

Grade: Above, At, Below, Unknown

	land owners	+1 well
FPN: E 03612	Valure/va	ll (TB) leur (zwells)
<i>Pit Sheet</i> Complete for each Pit an	nd Estimate Quantities of Material	Pit Name: , Pl

JOP ID: <u>110-E-1003</u>	
-1	
LONR Pit ID:	
W LMHN	
W LMHN	
W L M H N Type:	
ground sunken, etc)	
surrounds	
, recovery, layer depth and	
re Description	
	4
	ow
	tlowline
	we

[				And the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	<u> </u>		
Pit Sheet				_		Pit N	Name: PIT 1
Complete	for each Pit	and Estin	nate Quai	ntities of Mate	erial	و معالم	
Latitude:			DOP:	Length (ft.):			Diameter(ft): LDNR Pit ID:
Longitude:				Width (ft.)			Oil Depth (ft.):
Location R	eference: Z	201		Depth to Sedin	nent		Sediment
141		. 1		Surface(ft):			Depth1 (ft.): W L M H N
10.	of s	N 161	463	Outside Berm //			Sediment
		170		Height (ft.):			Depth2 (ft.): W L M H N
Orientation				Water	3.5	. /	Sediment W. J. M. V. N.
	Rectangular, Ci	ircular		Depth (ft.):	111		Depth3 (ft.): W L M H N
Liner Pres	) <b>\</b>	ata le	j	Construction:	hall aind	arblack	ck, etc) (berm above ground sunken, etc)
	gy, synthetic, Present? Y/N		es describe	dirt, dirt and si	nen, cma	CIDIOCK	k, etc)   (Settit above grania, sunken, etc)
Dreucnes P	resemi 1/AV	1) 19 16	s uescrive	•			
Surface Wo	iter Sheen? Y	If Ye	s describe	?:	·		
Water Pres	ent? Y/N	If Ye	s, Water s	sampling result	s: pH:		Salinity:
Norm/Air l	Monitoring:						
Le ver	include local	alga 4 heen tion of core	e (gr	Т	ter be	ees L	core name, total depth, recovery, layer depth and
contaminat		0) 50.1 /(		Units (ft)	A	C	C Core Description
	<b>,</b> .			Total	<del>                                     </del>	<u> </u>	Core Description
			1/3	Depth			
				Recovery			
(5)	ىر	\ مد	1) Kiels	Depth 1			
M		~ ()	TO)	Depth 2			
Ac.			1	Depth 3			
	WELL	/ // L->	EEE .	Depth 4			
Date	Time	Sample ID	C/G	Sampl	er		Matrix Description
					740	-	
			l				

Note: L-Light: 1-3% O/G, M-Medium: >3-20% O/G, H-Heavy: 1-3% O/G; N- None=<1% O/G; W-Wet(sludge) = >40% Moisture.

FPN:	E03	613	# · · · · · · · · · · · · · · · · · · ·

Pit Sheet					1	Pit N	ame	PITZ	7	
Complete for each Pit and	Estima	ate Qua	ntities of Mate	erial				1112	~	
Latitude:		DOP:	Length (ft.):	10	/		Dian	neter(ft):	LDNR Pit	
Longitude:		Ī	Width (ft.)	10	/		Oil Depth (ft.):			
Location Reference:			Depth to Sedin	mont			Sediment			
<u>-</u>		. 1	Surface(ft):	nem.		}	Depth1 (ft.): W L M H N			
W5W of SN 19	286	3 1	Outside Berm				Sediment			
		1	Height (ft.):			- 1		h2 (ft.):	W	LMHN
Orientation:			Water				Sedin			23 272 22 21
(Irregular, Rectangular, Circul	ar)		Depth (ft.):	/ / /			W	LMHN		
Liner Present V/N	<u> </u>		Construction:			1	<i>Бер.</i>	Construction Ty		2 1/1 12 11
(natural clay, synthetic, etc.):			(dirt, dirt and si	hell c	inder	block	etc)	l ·		etc)
Breaches Present? Y		describe		11011, 0	111401	DIOCK	, 010)	(outin above gree	una, pankon, c	
Dreuches Tresent. Triff	1) Tes	uesc/ide	•							
Surface Water Sheen? YN	If Yes	describe	2:							
Water Present?(Y)/N	If Yes,	, Water s	sampling result	s: p	H:		Sali	nity:		
Norm/Air Monitoring:	<del> </del>	ı			·	<del></del>				· · · · · · · · · · · · · · · · · · ·
Describe aquatic life, vegeta trees and mis	sc. V	eg.	growing	IH5	ide	?				
Map of Pit (include location north arrow hatch areas of s	•	and	Core Description):		incli	ude, c	ore no	ime, total depth, r	ecovery, layer	depth and
contamination):			Units (ft)	A	В	C	T	Core	Description	· · · · · · · · · · · · · · · · · · ·
NAI .			Total			1	<del> </del>			
<b>`</b> \``			Depth							
		_	Recovery							
E wood	led		Depth 1			-				
5000	00		Depth 2			1				
taus		Depth 3								
wooded			Depth 4	Depth 4						
1 1	imple ID	C/G	Sampl	ler				Matrix De	scription	
					i					
				······						

Container Sheet: Complete for each Container						
Container Name: AST	- 1.	(43,3 Circ	le one Gauged Estimated	BBL)		
Latitude: DOP 31°59' 79.0'	Shape: VERT, CYLINDER	Oil (ft.): 3.1 (4.19)	Oily Solids 9.7' (135.6)			
Longitude: 1.5	Height (ft): 15	Water (ft.):	Other Matrix (ft.):			
Location Reference:	Diameter or (l x w)	Construction: (single wall)	Construction Type:			
	(50):	steel poly etc.)	(bolted, welded, tc.)			
	10	Condition Adequate (XIII)				
Features: Open Top; Man-Way Open	en: Onen Empty Gas-f	ree Rusted or Corroded: Free F	llowing: Seenage			
Tours of Open Top, Main Way Open		Monitoring	lowing, beepage			
Location: Inside Cont., Breathing		Location: Inside Cont., Breat	hing Zone, Outside Cont.			
Equipment: LUDLUM (NORM		Equipment: PASSFORT	LEL			
Readings: 7 42/hr		Readings: LEL =				
Location: Inside Cont., Breathing	Zone, Outside Cont.	Location: Inside Cont., Breat	hing Zone, Outside Cont.			
Equipment: PASS PORT	02	Equipment:				
Readings: 02 = 2018	2.	Readings:				
Additional Comments: LDCATA	ED IN CONTAIN	IMENT AREA (CONT-	-1) SUGHTLY TO MODERATELY			
		ES STILL HAVE HAN				
			ES & EMPTY CONTENTS			
	THE ASTS.	LO SIEN IN VIEN	83 - 8/11/ 1/ 500/61/3			
Container Sheet: Complete for each Container						
Container Sneet: Comptete j	or each Container					
Container Sheet: Complete jo	······································	Circle	one: Gauged Estimated			
Container Name: AST_ Latitude: DOP	······································	oil (ft.): 0.8'(11.2)	one: Gauged Estimated  Oily Solids  (ft.):   (5.4)			
Container Name: AST_ Latitude: DOP	Z Shape:	Oil (ft.): 0 8/11/2	Oily Solids 1 1 ((C(f))			
Container Name: AST- Latitude: DOP 31°59'29.0	Z Shape: VERT. CYLINDS	oil (ft.): 0.8'(11.2)	Oily Solids 1. [ (5.4)  Other Matrix . Which M.			
Container Name: AST- Latitude: DOP 31°59'29.0 Longitude: 1.5	Z Shape: VERT. CYLINDS Height (ft): 15'	Oil (ft.): 0.8'(11.2) Water (ft.): NoNt	Oily Solids 1.1 ((5.4)  Other Matrix (ft.): WKNOWN			
Container Name: AST- Latitude: DOP 31°59'29.0 Longitude: 1.5	Z Shape: VERT. CYLINDS Height (ft): 15' Diameter or (l x w)	Oil (ft.): 0.8'(11.2) Water (ft.): NoNE  Construction: (single wall)	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type:			
Container Name: AST- Latitude: DOP 31°59'29.0 Longitude: 1.5	Z Shape: VERT. CYLINDS Height (ft): 15' Diameter or (l x w)	Oil (ft.): 0.8'(11.2) Water (ft.): NoNE  Construction: (single wall)	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type:			
Container Name: AST- Latitude: DOP 31°59'29.0 Longitude: 1.5	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):	Oil (ft.): 0.8 (11.2)  Water (ft.): NoNt  Construction: (single wall steel) poly etc.)  Condition Adequate: (NO)	Oily Solids (ft.):  Other Matrix (ft.):  (ft.):  Construction Type: (bolted, welded, etc.)			
Container Name: AST- Latitude: DOP 31°59'29.0 Longitude: 93°27'57.0 Location Reference:  Features: Open Top; Man-Way Open	Shape: VERT. CYLINDS  Height (ft): Diameter or (l x w) (ft):  in; Open, Empty, Gas-f	Oil (ft.): 0.8 (11.2)  Water (ft.): NONE  Construction: (single wall steel) poly etc.)  Condition Adequate: (None of the contioning)	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)			
Container Name: AST  Latitude: DOP  31°59′29.0  Longitude: 1.5  93°27′57.0  Location Reference:  Features: Open Top; Man-Way Open Location: Inside Cont., Breathing 2	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  in; Open, Empty, Gas-f  Air M  Zone, Outside Cont.	Oil (ft.): 0.8 (11.2)  Water (ft.): NONE  Construction: (single wall steel) poly etc.)  Condition Adequate: (None of Corroded; Free Functions Inside Cont., Great	Oily Solids (ft.):  Other Matrix (ft.):  (ft.):  Construction Type: (bolted, welded, etc.)  Clowing; Seepage  hing Zone, Outside Cont.			
Container Name: AST  Latitude: DOP  31°59′29.0  Longitude: 1.5  93°27′57.0  Location Reference:  Features: Open Top; Man-Way Open Location: Inside Cont., Breathing Topic Equipment: LUDLUM (Nor	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  in; Open, Empty, Gas-f  Air M  Zone, Outside Cont.	Water (ft.): O.8 (11.2)  Water (ft.): MONE  Construction: (single wall steel) poly etc.)  Condition Adequate: (A)  Tee; Rusted or Corroded; Free Frontioring  Location: Inside Cont., Great  Equipment: Pass Fore T	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)  Clowing; Seepage  hing Zone, Outside Cont.			
Container Name: AST  Latitude: DOP  31°59'29.0  Longitude: 1.5  93°27'57.0  Location Reference:  Features: Open Top; Man-Way Open Location: Inside Cont., Breathing Tequipment: LUDLUM (Nor Readings: 7 ATK/nr	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  (n; Open, Empty, Gas-fr  Air M  Zone, Outside Cont.	Construction: (single wall steel) poly etc.)  Condition Adequate: Condition Adequate: Condition Adequate: Condition Adequate: Condition Adequate: Condition Adequate: Condition Adequate: Condition Adequate: Condition Adequate: Condition Adequate: Condition: Inside Cont., Condition: Condition: Condition: Condition: Condition Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condition: Condi	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)  Clowing; Seepage  hing Zone, Outside Cont.			
Container Name: AST- Latitude: DOP 31°59′29.0 1.5 Longitude: 93°27′57.0 Location Reference:  Features: Open Top; Man-Way Open Location: Inside Cont., Breathing 2 Equipment: LUDLUM (Nex Readings: 7 MK/nr Location: Inside Cont., Breathing)	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  (m; Open, Empty, Gas-fr  Air M  Zone, Outside Cont.	Water (ft.): 0.8 (11.2)  Water (ft.): NONE  Construction: (single wall steel) poly etc.)  Condition Adequate: (No ree; Rusted or Corroded; Free Fonitoring  Location: Inside Cont., Breat  Readings: LEL = Contaction: Inside Cont., Breat	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)  Clowing; Seepage  hing Zone, Outside Cont.			
Container Name: AST- Latitude: 31°59′29.0 Longitude: 93°27′57.0 Location Reference:  Features: Open Top; Man-Way Open Location: Inside Cont., Breathing Tequipment: LUDUM (Nor Readings: 7 AK/nr Location: Inside Cont., Breathing) Equipment: PASS PORT	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  In; Open, Empty, Gas-f  Air M  Zone, Outside Cont.	Water (ft.): O.8 (11.2)  Water (ft.): MONE  Construction: (single wall steel) poly etc.)  Condition Adequate: (A)  ree; Rusted or Corroded; Free Footionitoring  Location: Inside Cont., Great  Equipment: PASS FOOT  Readings: LEL = D  Location: Inside Cont., Breat  Equipment: Breat  Equipment: PASS FOOT	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)  Clowing; Seepage  hing Zone, Outside Cont.			
Container Name: AST- Latitude: DOP 31°59'29.0 1.5 Longitude: 93°27'57.0 Location Reference:  Features: Open Top; Man-Way Open Location: Inside Cont., Breathing Tequipment: LUDUM (Nor Location: Inside Cont., Breathing Tequipment: PASS PORT Readings: 07°20.1	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  on; Open, Empty, Gas-f  Air M  Zone, Outside Cont.  O Z  S 20	Water (ft.): O.8 (11.2)  Water (ft.): MONE  Construction: (single wall steel) poly etc.)  Condition Adequate: MA  ree; Rusted or Corroded; Free Faction: Inside Cont., Great  Equipment: PASS FORT  Readings: LEL = D  Location: Inside Cont., Breat  Equipment: Readings: Lecusion: Readings: Readings: Readings: Readings: Readings: Readings:	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)  Clowing; Seepage  hing Zone, Outside Cont.			
Container Name: AST  Latitude: DOP  31°59′29.0  Longitude: 1.5  27′57.0  Location Reference:  Features: Open Top; Man-Way Open  Location: Inside Cont., Breathing Topic Equipment: LUDUM (Nor Readings: 7 MK/nr  Location: Inside Cont., Breathing Topic Equipment: PASS PORT Readings: 07°520.  Additional Comments: Location	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  (n; Open, Empty, Gas-fr  Air M  Zone, Outside Cont.  () Z  8 9	Water (ft.): O.8 (11.2)  Water (ft.): MONE  Construction: (single wall steel) poly etc.)  Condition Adequate: MON  ree; Rusted or Corroded; Free Frontioring  Location: Inside Cont., Great  Equipment: PASSPORT  Readings: LEL = D  Location: Inside Cont., Breat  Equipment: Readings: LEL = D  Location: Inside Cont., Breat  Equipment: Readings:	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)  Flowing; Seepage  hing Zone, Outside Cont.  Zohing Zone, Outside Cont.			
Container Name: AST  Latitude: DOP  31°59′29.0  Longitude: 1.5  27′57.0  Location Reference:  Features: Open Top; Man-Way Open  Location: Inside Cont., Breathing Topic Equipment: LUDUM (Nor Readings: 7 MK/nr  Location: Inside Cont., Breathing Topic Equipment: PASS PORT Readings: 07°520.  Additional Comments: Location	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  (n; Open, Empty, Gas-fr  Air M  Zone, Outside Cont.  () Z  8 9	Water (ft.): O.8 (11.2)  Water (ft.): MONE  Construction: (single wall steel) poly etc.)  Condition Adequate: MON  ree; Rusted or Corroded; Free Frontioring  Location: Inside Cont., Great  Equipment: PASSPORT  Readings: LEL = D  Location: Inside Cont., Breat  Equipment: Readings: LEL = D  Location: Inside Cont., Breat  Equipment: Readings:	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)  Flowing; Seepage  hing Zone, Outside Cont.  Zohing Zone, Outside Cont.			
Container Name: AST  Latitude: DOP  31°59′29.0  Longitude: 1.5  27′57.0  Location Reference:  Features: Open Top; Man-Way Open  Location: Inside Cont., Breathing Topic Equipment: LUDUM (Nor Readings: 7 MK/nr  Location: Inside Cont., Breathing Topic Equipment: PASS PORT Readings: 07°520.  Additional Comments: Location	Shape: VERT. CYLINDS  Height (ft):  Diameter or (l x w)  (ft):  (n; Open, Empty, Gas-fr  Air M  Zone, Outside Cont.  () Z  8 9	Water (ft.): O.8 (11.2)  Water (ft.): MONE  Construction: (single wall steel) poly etc.)  Condition Adequate: MON  ree; Rusted or Corroded; Free Frontioring  Location: Inside Cont., Great  Equipment: PASSPORT  Readings: LEL = D  Location: Inside Cont., Breat  Equipment: Readings: LEL = D  Location: Inside Cont., Breat  Equipment: Readings:	Oily Solids (ft.):  Other Matrix (ft.):  Construction Type: (bolted, welded, etc.)  Clowing; Seepage  hing Zone, Outside Cont.			

FPN: ΕΦ3612

Containment Sheet: Complete for each (	Containe	r(s) and	Canada	o N		- 7 1	
Estimated Quantities of Material			Contail	iment N	ame: C	ONT-1	
Latitude: 59' 29.0" DOP Leng	th & Widi	th 69'	* 24	ł	Dia	ameter (fr):	
Longitude: 1.5 Insid	le Berm		Soil		<del></del>	Oil Impact	
93° 27' 57.0" Heig	ht: ~	1-Z'	Depth 1 H N	(ft.)		W L M	
Location Reference: Oil Dept	h (ft.):	Ø'	Soil Depth 2	(ft):		Oil Impact W L M H	
		<u>~</u>	N				
Wate		41	Soil	· · · ·		Oil Impact	
Dept	h (ft.):	Depth 3 (ft.)			W L M H		
Orientation: (Irr, Rect., Cir.)  Is ca	pacity suff	icient for la	rgest conto	iner? Y L	Ď		
Is residual oil present? Y (N) Is co		adequate?	Contain	ment Sam	pled? Y/N	T	
Are Breeches present? YN If Yes, describe	breech loca MAL BU	ation: RRoWS c	N 99 :	side of	Z BERM	,	
	A in 1	Monitoring					
Location: Inside Cont., Breathing Zone, Outside			side Cont	Breathing	Zope, Outsi	de Cont.	
Equipment: LUDLUM (NORM)		quipment:				07	
Readings: 7 MR/hr		eadings: L			2 = 20	.7%	
Map of Containment (include location of cores north arrow): CASING, SWAB RIG	A 1	ore Descrip		de, core n	ame, total d	epth, recovery, layer	
SPARGE TRUCK		Inits (ft)	$A \mid B$	C	Co	re Description	
69'		otal Pepth					
1	R	ecovery					
24' DEBOS (AST 1)		epth 1					
	D	epth 2					
ANIMA).	(ab)	epth 3					
BURKOW WITH POMP )	95 D	epth 4					
Date Time Sample ID	C/G	Samp	ler	3	Matrix D	escription	
·		···					
						·	

Note: L-Light: 1-3% O/G, M-Medium: >3-20% O/G, H-Heavy: 1-3% O/G; N-None=<1% O/G; W-Wet(sludge) = >40% Moisture.

FPN: <u>CO3612</u>

	"Liquid"	Sludge	Sludge	Sludge/Soil	Soil	Soil
Name	Oil & Oily Solids (bbl)	Light (1-3% O/G) (yd³)	Medium (>3-20% O/G) (yd³)	Heavy (>20% O/G) (yd³)	Light (1-3% O/G) (yd³)	Medium (>3-20% O/G (yd³)
ASTI	114 43	.34				
ASTI	135.6					
4ST2	11.2					
AST2	15.4					
TOTAL	(205.5	4)				
		31— <del>111</del> 1 — 111 — 111 — 111 — 111 — 111				
			·			
	·					
				·		
		:				
Totals		,				

FPN: E \$ 3612

Facility Name:

THREAT STATUS TABLE (Revised)
TRANS-GULF PETROLEUM CORP. VARNER

JOP ID: 16-E-1853
Date of Survey: 2/18/2003

Criteria (1)	Evaluated Specifications		Possible Points	Points
Volme (Liquid)	1 Point per 5.8 bbl. (41 points if greater than 238 bbl). (2)	205561/5.8 = 35		
Volume (Contaminated	1 Point per 60 yd ³ of sludge (Pits with surface water sheening during sediment agitation, but no visual evidence of oil in sediments).	yd ³ / 60 =	Not to	X 25
Sludge) ⁽³⁾	1 Point per 12 yd³ of sludge (Pits with moderate surface water sheenin during sediment agitation and visual oil contamination in sediments).	ngyd³ / 12 =	exceed 41 points	
	1 Point per 4 yd ³ of sludge (Pits with floating oil and heavy oil saturation of bottom sediments).	yd³ / 12 =	by volume	50
Volume	1 point per 46 yd ³ of soil (Impacted soils with light oil contamination)	). $yd^3 / 46 = $		
(Contaminated Soil) (3)	1 point per 9 yd ³ of soil (Impacted soils with heavy oil contamination)	). $yd^3/9 =$		
	Isolated compound > 5,000 feet in distance.		0	
Proximity to Waterways ⁽⁴⁾	Points = [12 - (distance in ft/500 ft)] round to nearest whole number.	1-10		
	Over water.		10	
LDNR Well Assigned Value	LDNR assigned value of 1 = 8 points	wells x 8	N	8
	LDNR assigned value of 2= 6 points	wells x 6 =	exceed 16	
	LDNR assigned value of 3 = 4 points	wells x 4 =	poins (additive	
	LDNR assigned value of 4 = 2 points	2 wells x 2 = 4	(additive by volume criteria).  0 1-10 10 Not to exceed 16 poins (additive hy wells).  0 5 10 15 0 1-7	
	No rust, weeps, leaks, or cracks.		0	
	Rusty, pitted, corroded, or cracked.		5	
	Top open or holedPotential overflow from precipitation.		10	
Container	Weeping, seeping or holed (including seepage through pit berm walls)	).	15	
Condition ⁽⁵⁾	Hatches/containers welded or locked, or manways removed.		0	
Potential for	Hatches/containers accessible, proximal to roads or transportation.		1-7	
Dumping	Containers open, pits, and proximal to roads or transportation.	8		
	Security features or fences present, not proximal to persons or wildlife	·	Ú	
Accessability to Wildlife and	Limited security features, accessible to persons or wildlife.	1-9		
Persons	Within 5,000 feet of residential area and open pits or containment wit	10		
	Total =		100	
	Priority based on points: Low Threat (LT) 0-40 Substant	ial Threat (ST) 41-100		>11

Qualitative interpretation prepared by Contractor, based on seven criteria deemed most significant in evaluating potential threat. (1)

A volume of 238 bbl scores the maximum number of points based on the definition of a major inland discharge being 10,000 gallons (238 bbl) [40 CFR 300]. (2)

For the purpose of estimating threat to the environment from oil in soils and/or sludge, five scenarios, which are most commonly encountered in field operations, are presented. The basis of the values presented for each scenario were derived from the following calculation using an average density, moisture concentration and oil and grease concentration of contaminated soils and sludge from historical facility assessment and analytical data:

(Density of material (lbs/yd³) X Total volume of material (yd³) X [(100-Percent moisture (%)/100] X [Percent Oil and grease dry weight (%)/100]) / Density of Crude oil  $(1432.7 \text{ lbs/yd}^3)$  = Volume of oil and grease  $(yd^3)$ 

(1452.7 lbs/yd) = Volume of the anglesses (yd).

For the purpose of threat evaluation, a waterway is defined as any USGS identified perennial water body.

The evaluation of container conditions should include observations of any container on-site including pits, but should be limited to those containers which contain product.

Key:

bbl = Barrels Ft. = Feet (US)

% = Percent USGS = United States Geological Survey

lbs. = Pounds

yd3 = Cubic yards

15 OF 15







# Beeson, David

From: Beeson, David

Sent: Tuesday, September 16, 2003 5:45 PM

To: 'Tony.Roberson@swd02.usace.army.mil'; 'Joe.H.McCoy@swf02.usace.army.mil';

'Michael.L.Keen@swf02.usace.army.mil'

**Subject:** Draft RPP for FPN E03612



# **DRAFT**

# U.S. ENVIRONMENTAL PROTECTION AGENCY OPA 90 Removal Project Plan (RPP)

#### I. HEADING

Date Monday, September 15, 2003

From: OSC Wally Copper, On-Scene Coordinator

U.S. EPA, Region 6

To: *Mr. Case Officer Name*, U.S.C.G.

National Pollution Funds Center

Subject: Oil Removal Project Plan (RPP)

Site: Trans - Gulf Petroleum Corp. - Varner

Oil & Gas Field: Red River – Bull Bayou, Desoto Parish, LA.

#### II. BACKGROUND

FPN: E03612

EPA Site ID:

Response Authority: OPA

State Notification: LOSCO; LDNR Date OSLTF Opened: 18 August, 2001

Mob Date: N/A

Current Project Ceiling: \$XX,XXX.XX

Demobilization Date: N/A Completion Date: N/A

Incident Category: Activities at this site are pursuant to Section 311(c) Federal Water Pollution Control Act (FWPCA), as amended by the Oil Pollution Act of 1990 (OPA), Public Law 101-380, in accordance with the National Contingency Plan (NCP).

#### III. SITE INFORMATION and CONDITIONS

#### **A.** Site Description and Physical Location

The Trans - Gulf Petroleum Corp. – Varner abandoned oil production facility (JOP ID 16-E-1003) was referred to EPA in February of 2003 by the State of Louisiana to considered for OPA response actions. This facility is located in the Red River - Bull Bayou Oil and Gas Field (Field ID 7651), approximately 7.7 miles west-southwest of the town of Coushatta, in Section 34, Township12 North, Range 11 West, of Desoto Parish, Louisiana, at Latitude 31° 59' 9" N and Longitude 93° 27' 57" W. There are approximately five residences located within a one-mile radius of the facility. The facility is access from the northeast via Ranch Road, which is off of Louisiana Highway (LA Hwy) 510.

The U.S. Army Corps of Engineers Site Assessment contractor mobilized to the facility on February 18, and May 3, 2003 to conduct the Ground Truth Survey (GTS) for the facility. Access for Phase I GTS

assessment activities was coordinated through Louisiana Department of Natural Resources (LDNR) Conservation Enforcement Specialist (CES) Buddy Bufkin.

The facility consists of two aboveground storage tanks (AST), one secondary containment basin, two LDNR registered pits, and three oil production wells. Two 210-barrel (bbl), welded steel ASTs, identified as AST1 and AST2 are situated within a 69-foot by 24-foot rectangular, earthen bermed, secondary containment basin, identified as CONT1. The facility serviced three production wells: the Varner Well No. 001 (SN 152795), Varner Well No. 002 (SN 152863), and Varner Well No. 003 (SN 194686). All of the wells are listed as orphaned by the LDNR. A 30-foot diameter reserve pit, identified as PIT1 and believed to be LDNR Pit ID 16P419, was located directly 30 feet to the west of SN 152863. A 40-foot by 10-foot reserve pit, identified as PIT2 and believed to be LDNR Pit ID 16P418, was located directly west southwest of SN 152863.

The facility components reside on property owned by two landowners. A signed access agreement for the portion of the facility containing AST1, AST2, CONT1 and SN 152759 was obtained from the landowner. The landowner of the property on which the remainder of the facility is located has declined to sign an access agreement. As a result, samples have not been submitted for laboratory analysis from PIT1 or PIT2, which are located that portion of the facility without signed access.

Based on gauging, soil core observations, and sample analysis, the following volumes of non-hazardous oilfield waste (NOW) are estimated to be present at the facility. CONT1 is estimated to contain 6 cubic yards of lightly oil-impacted soils. Analytical results indicate that the upper 0 to 3-inch thick sandy clay sediment and soil layer had an oil and grease (O & G) concentration above the limit of 1% established by the Louisiana Administrative Code, Title 43, Part XIX Section 313 (LAC43.XIX.313).

AST1 and AST2 contain approximately 121 bbl of oil and oily sludge that potentially should not be considered as NOW due to the uncertainty of the origin of the contents as resultant to exploration and production (E&P) operations. The Louisiana Department of Environmental Quality (LDEQ) Hazardous Waste Division investigated the operator of this facility for his actions at a separate, nearby facility, specifically JOP16-E-1002/FPN N01126, and determined, based on sample analysis of the contents of containers at that facility, that they contained non-specific waste oil illegally stored by the operator. In addition, the property owner stated that during the same time period the operator had dumped a non-E & P oil/oily substance that had not originated from this lease into the tanks. Therefore the potential is great for the ASTs associated with this facility to also contain waste oil that would be regulated under 40 CFR Part 279. Such material may not be disposed of as NOW and should be considered for oil recycling or fuel blending. During Phase II of the GTS a composite sample of the contents of AST1 and AST 2 was collected and assist in determining disposal requirements. The analytical results indicate that fuels blending should be considered as a disposal option.

#### **B.** Threat

#### (1) <u>Description of Threat</u>

During the Phase I Ground-Truth Survey (GTS), the U.S. Army Corps of Engineers Site Assessment contractor gauged the tanks to determine the volume of oil and sludge present in the tanks. The combined volume of the ASTs was estimated to be 121 bbl of oil and sludge. An additional 84 bbl of

produced water was identified in AST1. Soil sampling was conducted during Phase II of GTS and the volume of oil-contaminated soil, in CONT1 only, was reported by the Corps of Engineers' contractor to be 6 cubic yards. Due to access restrictions, the volume of oil-contaminated soil, if any, in PIT 1 and PIT 2 has not been delineated. No radiation readings significantly above the background level of 5 micro-Roentgens per hour ( $\mu$ R/hr) were observed during naturally occurring radioactive material (NORM) screening at the facility.

At the time of the ground truth survey, no active discharges were noted from the tank battery or wells. AST1 and AST2 were rusted and corroded. Both of the tanks have handles on their valves which could be used by vandals to discharge the tank contents. Animal borrows present in the south berm have compromised the integrity and effectiveness of the containment basin. Due to the deteriorated condition of the vessels and containment there is a high potential for a discharge.

The facility is bordered by:

N: Residential property;

S: Woodlands and fields followed by Dolet Bayou;

E: Ranch Road and agricultural land;

W: Woodlands followed by Dolet Bayou.

The facility drains approximately 100 feet southwest to Dolet Bayou. Dolet Bayou flows through the Jims River, Bayou Pierre, and into the Red River which is "navigable" in fact and subject to interstate commerce.

Since the facility is abandoned and receives no maintenance, any spill or discharge from the facility would go largely unnoticed until it reached the navigable waters of the United States. Based on current conditions at the site, the threat of discharge or release of oil is judged to be substantial.

#### (2) <u>Determination of Threat</u>

Based on the Phase I GTS data there are 121-bbl of oil and sludge on-site that meet the definition of "oil" as defined by Section 1001(23) of OPA, 33 U.S.C. § 2701(23).

A failure of the aforementioned storage and process vessels through corrosion, vandalism or force majeure would have the potential to release a harmful quantity of oil within the meaning of Section 311 (b)(3) of the CWA, 33 U.S.C. § 1321(b)(3), and 40 CFR § 110.3(b), into the site drainage and ultimately into the Red River.

The EPA Region 6 FOSC has determined from the Phase I GTS data and standard EPA threat analysis protocols which are consistent with the criteria for determination of a substantial threat of discharge found in the *U.S.C.G. NPFC Users Guide, July 2002*, that this facility poses a substantial threat of discharge of oil to the navigable waters of the U.S., as defined in Section 311(a)(2) of CWA, U.S.C. § 1321, and 40 CFR Part 110.1 and Section 1001(7) of OPA, 33 U.S.C. § 2701(7), due to the quantity of oil present in the ASTs (121 bbl), the condition of the storage vessels and associated flow lines, the evidence of historic discharges into the environment, the poor condition of containment around the

ASTs, and a lack of security features.

# **C.** Previous Site Actions

LDNR Conservation Enforcement Specialist (CES) R. A. Bufkin performed an Orphaned Oilfield Site Inspections of the facility on January 24, 2001 and January 25, 2001. During the LDNR inspection, two aboveground storage tanks and three production wells were identified. It was noted that there was no contamination around the wellheads at the facility and that "the contents of stock tanks is not production from these wells and should be analyzed before removing from lease".

#### IV. RESPONSE INFORMATION

#### **A.** Current Situation

The Ground-Truth survey (assessment phase) has been completed.

# **B.** Proposed Actions

Due to the fact that the listed PRP has no means of funding the cleanup, EPA will initiate a removal action to abate the substantial threats to navigable waters of the U.S. The removal action will entail the removal and off-site disposal of the oil and sludge remaining in the ASTs. The tanks and equipment will be demolished and removed to address residual contents and the underlying contaminated soil from previous discharges. The ASTs and associated piping will be decontaminated and disposed of as scrap metal when possible. Any oil-contaminated soil and sludge from the secondary containment area, pit, and oil-impacted areas will be disposed of in a manner consistent with the NCP and the LDNR statewide Regulation 29-B parameters. None of the wells are actively leaking, therefore they will be deferred to the State to be plugged in accordance with LDNR 29-B guidelines. The removal action will be conducted in accordance with the National Contingency Plan (NCP), as codified at 40 CFR Part 300.

#### **C.** Enforcement

See attached Enforcement Confidential Addendum.

#### **D.** Next Steps

None

# V. ESTIMATED PROJECT COST INFORMATION

#### **A.** Estimated Project Costs Incurred to Date:

Extramural Costs
 EPA Contractors
 PRFAs

 Intramural Costs
 EPA Personnel

EPA Personnel \$xxxxxxx EPA Travel \$xxxxxxx

\$xxxxxxx

3. Indirect Costs (NOT APPLICABLE AT THIS TIME)
Regional Rate %

4. Total \$xxxxxxx

В.	<u>Total Project Estimated Costs:</u>						
	1. Extramural Costs						
	EPA Contractors						
	PRFAs	\$xxxxxxx					
	2. Intramural Costs						
	EPA Personnel	\$xxxxxxx					
	EPA Travel	\$xxxxxxx					
	3. Indirect Costs (NOT APPLICABLE AT THIS	TIME)					
	Regional Rate%						
	4. Total	\$xxxxxxx					
C.	Estimated Costs; Breakdown by Fiscal Year:						
	1. FY03						
	Extramural Costs						
	EPA Contractors						
	PRFAs	\$xxxxxxx					
	Intramural Costs						
	EPA Personnel	\$xxxxxxx					
	EPA Travel	\$xxxxxxx					
	Indirect Costs (NOT APPLICABLE AT T	HIS TIME)					
	Regional Rate%						
	Total	\$xxxxxxx					
	2. FY04						
	Extramural Costs						
	EPA Contractors						
	PRFAs	\$xxxxxxx					
	Intramural Costs						
	EPA Personnel	\$xxxxxxx					
	EPA Travel	\$xxxxxxx					
	Indirect Costs (NOT APPLICABLE AT THIS	S TIME)					
	Regional Rate%						
	Total	\$xxxxxxx					

#### **ATTACHMENT**

Site: <u>Trans - Gulf Petroleum Corp. - Varner</u>

**FPN:** E03612 SSID:

ENFORCEMENT ADDENDUM
(ENFORCEMENT SENSITIVE)
(DO NOT CITE OR QUOTE)
(NOT SUBJECT TO FOIA)

The last known Operator of Record/Potentially Responsible Party has been identified through the files maintained by the Louisiana Department of Natural Resources, Office as:

Trans - Gulf Petroleum Corporation – Varner P.O. Box 5355 Bossier City, LA 71171-5355

Operator Code: 6040 Contact: William Sneed

There is a "Red Flag" notice in the LDNR record base, dated 09/20/1999, which states "no responsible party/correspondence unanswered" for Trans – Gulf Petroleum Corporation. Other warnings include: 01/01/1977 - "I&E Compliance Violation;" "Form R-4 Suspended for Production Audit Discrepancies," and "Fine – Civil Penalty has been Issued." There are no other entries on the operator record form.

Mr. Danny Powell, property owner for a portion of the facility stated that he had pumped the wells for the operator.

There is no indication that other the surface property owner had any involvement in the operation of the oil facility.

On **<date>**, the EPA OSC sent a Letter of Federal Interest to the Operator of at the address given by the LDNR record base. The letter was returned unopened, unclaimed, unable to deliver, no forwarding address.

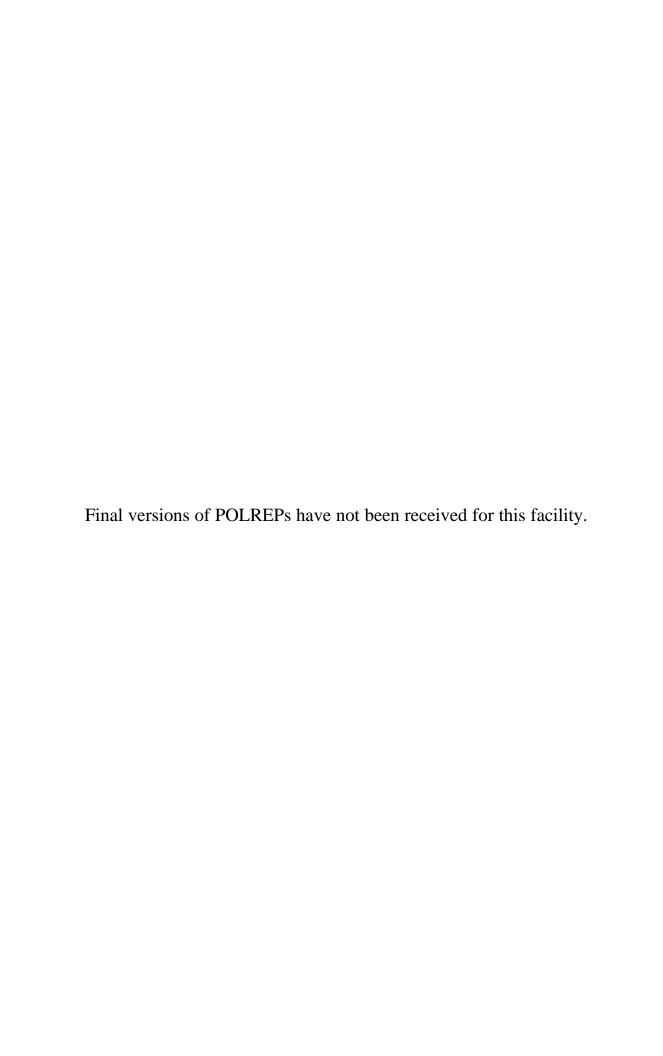
EPA No.: 16-E-1003 FPN: E03612

# **APPENDIX 18**

# FINAL POLREPS

16E1003.pdf Contract: DACW5602G1001

Task No.: 003





## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6 1445 ROSS AVENUE, SUITE 1200 DALLAS, TX 75202-2733

RECEIVED

Shreveport Area Office 3003 Knight St., Suite 122 Shreveport, LA 71105

# **CONSENT FOR ACCESS TO PROPERTY**

NAME: Trans-Gulf Petroleum Corp - Varner
LOCATION OF PROPERTY: Section 034, Township 12N, Range 11W.
SN 152795

I consent for the officers, employees, and authorized representatives of the United States Environmental Protection Agency (EPA) to enter and have continued access to my property for the following purposes:

- The taking of such soil, water, air samples. Samples from tanks, pits, and equipment as may be necessary;
- Other actions related to the investigation of surface or subsurface soils;
- The taking of a response action necessary to mitigate any threat to human health and the environment including, but not limited to, plugging wells, removing tanks, tank contents and piping, removing contents of any pits and closing such pits. And removing any oil contaminated soils.

I realize that these actions by EPA are undertaken pursuant to its response and enforcement responsibilities under the Clean Water Act (CWA), 33 U.S.C. § 1321, ET SEQ., as amended by the oil pollution act of 1990 (OPA).

As owner of the property or as an individual with authority to grant access, this written permission is given by me voluntarily with knowledge of my right to refuse access and without threats or promises of any kind.

Date:_	3/20/03	Owner Signature:	Doll	W.	Youl	
	/ /	·				
Date:_		Renter Signature:_		· · · · · · · · · · · · · · · · · · ·		

# **Daily Progress Report**

Roy F. Weston Suite 460 **70 NE Loop 410** San Antonio, TX 78216 Trans-Gulf Pet. Co. - Varner, FPN E03612 **Removal Actions** TDD No. 06 03 03 0002

# Report No. 01

#### Date 10/01/03

#### ONSITE PERSONNEL:

Site activities commenced: 0700 Federal oversight provided by: Corps of Engineers Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1700

Removal Contractor: SEI

Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

#### WEATHER:

Temperature: 60-73 °F Site Conditions: Dry

Lost time due to weather: N/A

#### Winds: N/A Rainfall: N/A

#### SITE ACTIVITIES:

Shaw had the equipment mobilized to the facility from 09 September 2003 to 01 October 2003. The equipment mobilized to the facility included a bull dozer, track hoe, and shear.

On 01 October 2003, Shaw started construction activities. They cleared and grubbed vegetation from around the CONT1tank battery and Varner well 001. They uncovered, in addition to the CONT1 tank battery, a small drip tank just east of well 001 and three diesel storage tanks northwest of CONT1 that were not identified during the ground truth survey.

#### **FUTURE ACTIVITIES:**

Finish clearing and grubbing operations. Empty and dispose oil/sludge and bottom contents from above ground storage tanks AST1 and AST2 and separator S1. Dismantle and clean the above ground storage tanks and separators, and transport the dismantled metal scrap parts off site for recycling. Land farm oil-impacted soils in CONT1. Restore and grade the land farm surface to surrounding slope for drainage. Collect confirmation samples and demobilize from the facility.

MEETINGS/ VISITORS: Donnie Powell (land owner) visited site to inspect construction progress

NOTES: N/A

# **Daily Progress Report**

Roy F. Weston Suite 460 70 NE Loop 410 San Antonio, TX 78216 Trans-Gulf Pet. Co. - Varner, FPN E03612 Removal Actions TDD No. 06 03 03 0002

## Report No. 02

#### Date 10/02/03

#### ONSITE PERSONNEL:

Site activities commenced: 0700
Federal oversight provided by: Corps of Engineers
Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1700 Removal Contractor: SEI

Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

#### WEATHER:

Temperature: 54-73° F Site Conditions: Dry Lost time due to weather: N/A

#### Winds: N/A Rainfall: N/A

#### SITE ACTIVITIES:

On 02 October 2003, Shaw continued to clear and grub vegetation from around the CONT1tank battery and Varner well 001.

#### **FUTURE ACTIVITIES:**

Finish clearing and grubbing operations. Empty and dispose oil/sludge and bottom contents from above ground storage tanks AST1 and AST2 and separator S1. Dismantle and clean the above ground storage tanks and separators, and transport the dismantled metal scrap parts off site for recycling. Land farm oil-impacted soils in CONT1. Restore and grade the land farm surface to surrounding slope for drainage. Collect confirmation samples and demobilize from the facility.

MEETINGS/ VISITORS: Donnie Powell (land owner) visited site to inspect construction progress

NOTES: N/A

Roy F. Weston Suite 460 70 NE Loop 410 San Antonio, TX 78216 Trans-Gulf Pet. Co. - Varner, FPN E03612 Removal Actions TDD No. 06 03 03 0002

# Report No. 03

#### Date 10/03/03

#### ONSITE PERSONNEL:

Site activities commenced: 0700
Federal oversight provided by: Corps of Engineers
Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1700

Removal Contractor: SEI
Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

#### WEATHER:

Temperature: 54-72° F
Site Conditions: Dry
Lost time due to weather: N/A

Winds: N/A Rainfall: N/A

#### SITE ACTIVITIES:

On 03 October 2003, Shaw finished clearing and grubbing vegetation from around the CONT1 tank battery and Varner well 001. The owner of the adjacent residence claimed the three diesel storage tanks as his property and confirmed that they were not associated with the facility.

#### **FUTURE ACTIVITIES:**

Empty and dispose oil/sludge and bottom contents from above ground storage tanks AST1 and AST2 and separator S1. Dismantle and clean the above ground storage tanks and separators, and transport the dismantled metal scrap parts off site for recycling. Land farm oil-impacted soils in CONT1. Restore and grade the land farm surface to surrounding slope for drainage. Collect confirmation samples and demobilize from the facility.

MEETINGS/ VISITORS: N/A

Roy F. Weston Suite 460 **70 NE Loop 410** San Antonio, TX 78216 Trans-Gulf Pet. Co. - Varner, FPN E03612 **Removal Actions** TDD No. 06 03 03 0002

# Report No. 04

#### Date 10/04/03

#### ONSITE PERSONNEL:

Site activities commenced: 0700 Federal oversight provided by: Corps of Engineers Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1200 Removal Contractor: SEI

Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

#### WEATHER:

Temperature: 58-71°F Site Conditions: Dry

Lost time due to weather: N/A

Winds: N/A Rainfall: N/A

#### SITE ACTIVITIES:

On 04 October 2003, Shaw did not perform construction operations. They cleaned the equipment and performed routine equipment maintenance.

## **FUTURE ACTIVITIES:**

Empty and dispose oil/sludge and bottom contents from above ground storage tanks AST1 and AST2 and separator S1. Dismantle and clean the above ground storage tanks and separators, and transport the dismantled metal scrap parts off site for recycling. Land farm oil-impacted soils in CONT1. Restore and grade the land farm surface to surrounding slope for drainage. Collect confirmation samples and demobilize from the facility.

MEETINGS/ VISITORS: N/A

Roy F. Weston Suite 460 70 NE Loop 410 San Antonio, TX 78216 Trans-Gulf Pet. Co. - Varner, FPN E03612 Removal Actions TDD No. 06 03 03 0002

# Report No. 05

#### Date 10/06/03

#### ONSITE PERSONNEL:

Site activities commenced: 0700
Federal oversight provided by: Corps of Engineers
Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1700 Removal Contractor: SEI

Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

#### WEATHER:

Temperature: 58-71°F Site Conditions: Muddy Lost time due to weather: N/A Winds: N/A Rainfall: N/A

#### SITE ACTIVITIES:

On 06 October 2003, Shaw opened up AST2 to reveal tank contents of AST2 for vacuum truck access. Vacuum trucks were scheduled to pump tanks tomorrow. START-2 scanned the above ground storage tanks AST1 and AST2 for NORM and recorded readings at back ground levels of 5-6 uR/hr.

#### **FUTURE ACTIVITIES:**

Empty and dispose oil/sludge and bottom contents from above ground storage tanks AST1 and AST2 and separator S1. Dismantle and clean the above ground storage tanks and separators, and transport the dismantled metal scrap parts off site for recycling. Land farm oil-impacted soils in CONT1. Restore and grade the land farm surface to surrounding slope for drainage. Collect confirmation samples and demobilize from the facility.

MEETINGS/ VISITORS: N/A

Roy F. Weston Suite 460 70 NE Loop 410 San Antonio, TX 78216 Trans-Gulf Pet. Co. - Varner, FPN E03612 Removal Actions TDD No. 06 03 03 0002

# Report No. 06

#### Date 10/07/03

#### ONSITE PERSONNEL:

Site activities commenced: 0700
Federal oversight provided by: Corps of Engineers
Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1700 Removal Contractor: SEI

Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

#### WEATHER:

Temperature: 65-80°F Site Conditions: Muddy Lost time due to weather: N/A Winds: N/A Rainfall: N/A

#### SITE ACTIVITIES:

On 07 October 2003, Bear Creek Env. pumped and transported 130 barrels of saltwater from AST1, and 85 barrels of tank sludge from AST1, the three diesel tanks, and the work over rig tank, to U.S. Liquids in Elm Grove, Louisiana, for disposal. Mussop Inc. pumped and transported 60 barrels of tank sludge from AST1 and AST2 to U.S. Liquids in Elm Grove, Louisiana, for disposal. START-2 scanned the interiors of the cut open AST1 and AST2 storage tanks for NORM and recorded background readings of 5 uR/hr. Shaw upgraded the access road and directed pumping operations.

## **FUTURE ACTIVITIES:**

Dismantle and clean the above ground storage tanks AST1 and AST2, and transport the dismantled metal scrap parts off site for recycling. Land farm and/or transport off site for disposal the oil-impacted soils in CONT1. Restore and grade the land farm surface to surrounding slope for drainage. Collect confirmation samples and demobilize from the facility.

MEETINGS/ VISITORS: N/A

Roy F. Weston Suite 460 **70 NE Loop 410** San Antonio, TX 78216 Trans-Gulf Pet. Co. - Varner, FPN E03612 **Removal Actions** TDD No. 06 03 03 0002

# Report No. 07

#### Date 10/08/03

#### ONSITE PERSONNEL:

Site activities commenced: 0700 Federal oversight provided by: Corps of Engineers Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1700 Removal Contractor: SEI

Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

# WEATHER:

Temperature: 69-80°F Site Conditions: Dry

Lost time due to weather: N/A

# Winds: N/A Rainfall: N/A

#### SITE ACTIVITIES:

On 08 October 2003, Shaw dismantled and pressure washed AST1 and AST2 and stockpiled the scrap parts. They excavated and stockpiled oil-impacted material in CONT1. Murphy Bros. Trucking loaded and transported 66 cubicyards of CONT1 oil-impacted material to U.S. Liquids in Elm Grove, Louisiana for disposal. START-2 collected a five-point composite confirmation sample from the CONT1 excavation floor. Shaw started to backfill and grade the CONT1 excavation.

# **FUTURE ACTIVITIES:**

Transport the dismantled metal scrap parts off site for recycling. Restore and grade the land farm surface to surrounding slope for drainage. Demobilize from the facility.

MEETINGS/ VISITORS: N/A

Roy F. Weston Suite 460 70 NE Loop 410 San Antonio, TX 78216 Trans-Gulf Pet. Co. - Varner, FPN E03612 Removal Actions TDD No. 06 03 03 0002

# Report No. 08

#### Date 10/09/03

#### ONSITE PERSONNEL:

Site activities commenced: 0700 Federal oversight provided by: Corps of Engineers Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1700 Removal Contractor: SEI

Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

# WEATHER:

Temperature: 69-74°F Winds: N/A

Site Conditions: Muddy Rainfall: Steady rain during moring

Lost time due to weather: Work shut down 1030 due to rain

#### SITE ACTIVITIES:

On 9 October 2003, Shaw loaded a 40 cubic-yard roll off box from General Scrap from Shreveport, Louisiana, with tank scrap metal for transport off site and recycling. They started final grade operations. Shaw stopped work and called a rain day because of steady rain that rendered site conditions muddy and unworkable.

#### **FUTURE ACTIVITIES:**

Restore and grade the land farm surface to surrounding slope for drainage. Demobilize from the facility.

**MEETINGS/ VISITORS:** Joe McCoy (USACE), Donnie Powell (land owner), and Anthony Valure (adjacent land owner) visited facility to inspect construction progress

Roy F. Weston Suite 460 **70 NE Loop 410** San Antonio, TX 78216

Trans-Gulf Pet. Co. - Varner, FPN E03612 **Removal Actions** TDD No. 06 03 03 0002

# Report No. 09

#### Date 10/14/03

ONSITE PERSONNEL:

Site activities commenced: 0700 Federal oversight provided by: Corps of Engineers Federal Reps: OSC Wally Cooper, USACE John Wheeler

START Member: Richard Papusch

Site activities concluded: 1700 Removal Contractor: SEI

Removal Contractor PM: Dwight McFarlain

# Crew Members: Two

WEATHER:

Temperature: 53-72°F Site Conditions: Dry

Lost time due to weather: N/A

Winds: N/A Rainfall: N/A

#### SITE ACTIVITIES:

Shaw was on break from 10/10/2003 to 10/13/2003

On 14 October 2003, Shaw finished final grade operations, restored the site access road, and mobilized the equipment off site.

# **FUTURE ACTIVITIES:**

Site construction activities are finished. No future activities are anticipated at this facility.

**MEETINGS/ VISITORS: N/A** 

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D-0020

Site Name & Location. Trans Gulf Petroleum Corp-Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 01	Task Order #: 0102	Date: 10/2/03
Weather: clear	Temp. (Max & Min):75	Rainfall (in)

1. Description of work performed by contractor(s),

Mobilization

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

4. On-site conditions which resulted in delayed progress: None

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $$\operatorname{Tested}\colon 0$$  To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

Oil/Sludge: Solidified

12.	List	the	following	transportation	and/or	disposal	information:
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Quantity	I.D. #	Material	Manifest #	Disposal Location
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13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3.

The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials.

14. List all safety violations observed and corrective actions taken:

See Attached: None

15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain_

Contractor's Designated

Quality Control Representative

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D-0020

Site Name & Location. Trans Gulf Petroleum Corp-Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 02	Task Order #: 0102	Date: 10/3/03
Weather: Clear	Temp. (Max & Min):73	Rainfall (in)

1. Description of work performed by contractor(s),

Road Upgrade

#### RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

 On-site conditions which resulted in delayed progress: None

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0 Tested: 0

To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location	Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

Oil/Sludge: Solidified

<ol> <li>List the following transportation and/or disposal inform</li> </ol>	ormation	info	isposal	and/or	transportation	following	the	List	12.
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Quantity	I.D. #	Material	Manifest #	Disposal Location
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		:6		

13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3.

The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials.

14. List all safety violations observed and corrective actions taken:

See Attached: None

15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain

Contractor's Designated

Quality Control Representative

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D-0020

Site Name & Location. Trans Gulf Petroleum Corp-Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 03	Task Order #: 0102	Date: 10/4/03
Weather: Clear	Temp. (Max & Min):72	Rainfall (in)

1. Description of work performed by contractor(s),

Road Upgrade

#### RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

 On-site conditions which resulted in delayed progress: None

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $$\operatorname{Tested}\colon 0$$  To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

Oil/Sludge: Solidified

# 4334 RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D. 12. List the following transportation and/or disposal information: Quantity I.D. # Material Manifest # Disposal Location 13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3. The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials. 14. List all safety violations observed and corrective actions taken: See Attached: None 15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain

Contractor's Designated

Quality Control Representative

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 04	Task Order #: 0102	Date: 10/05/03 Sun.
Weather:	Temp. (Max & Min)	Rainfall (in) 0

1. Description of work performed by contractor(s),

Off today no work performed.

## RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

4.	On-site	conditions	which	resulted	in	delayed	progress
	None						

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $$\operatorname{Tested}\colon 0$$  To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

Oil/Sludge: Solidified

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D. 12. List the following transportation and/or disposal information: I.D. # Quantity Material Manifest # Disposal Location 13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3. The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials. 14. List all safety violations observed and corrective actions taken:

15. List any credits and/or adjustments due to the government (reference

See Attached: None

invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain

wight M. Farlain Contractor's Designated

Quality Control Representative

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 05	Task Order #: 0102	Date: 10/06/03 Mon.
Weather: cool	Temp. (Max & Min) 82/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Site grading and preparing tanks for the vacuum trucks.

## RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

4.	On-site	conditions	which	resulted	in	delayed	progress
	None						

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0 Tested: 0
To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

Oil/Sludge: Solidified

# 4334 RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D. 12. List the following transportation and/or disposal information: I.D. # Material Manifest # Quantity Disposal Location 13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3. The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials. 14. List all safety violations observed and corrective actions taken: See Attached: None 15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain Dungh McForlam
Contractor's Designated

Quality Control Representative

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 05	Report #: 05 Task Order #: 0102		
Weather: cool	Temp. (Max & Min) 82/58	Rainfall (in) 0	

1. Description of work performed by contractor(s),

Site grading and preparing tanks for the vacuum trucks.

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

4.	On-site	conditions	which	resulted	in	delayed	progress:
	None						

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

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9. List the total number of samples collected and tested for the day: Collected: 0  $\,$  Tested: 0

To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

Oil/Sludge: Solidified

12. List the following transportation and/or disposal information:

Quantity	I.D. #	Material	Manifest #	Disposal Location
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13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3.
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14. List all safety violations observed and corrective actions taken:

See Attached: None

15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain 1 Contractor's Designated

Quality Control Representative

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 06 Task Order #: 0102		Date: 10/07/03 Tue.
Weather: cool	Temp. (Max & Min) 82/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Water treatment and disposal. Vacuum trucks scheduled to remove liquids and solids. We have also instructed to remove liquids from the work over rig and three diesel tanks found on-site.

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

 On-site conditions which resulted in delayed progress: None

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected:  $\mathbf 0$  Tested:  $\mathbf 0$ 

To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location	Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

Oil/Sludge: Solidified

12. List the following transportation and/or disposal information:

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Quantity	I.D. #	Material	Manifest #	Disposal Location
85	06	Tank sludge	2799388	US Liquids
60	06	Tank Sludge	2799389	US Liquids
130	01	Salt Water	2799390	US Liquids
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			and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	
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13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3.

The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials.

14. List all safety violations observed and corrective actions taken:

See Attached: None

15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain Contractor's Designated
Quality Control Representative

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 07	Task Order #: 0102	Date: 10/08/03 Wed.
Weather: cool	Temp. (Max & Min) 82/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Water treatment and disposal. Cutting up remaining AST's and pressure washing the insides of AST's. Preparing for the load out of the scrap metal from AST's. Loading out two trucks of stabilized sludge.

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

4. On-site conditions which resulted in delayed progress: None

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected:  $\mathbf 0$  Tested:  $\mathbf 0$ 

To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location	Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

12.	List	the	following	transportation	and/or	disposal	information:
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		e **		
Quantity	I.D. #	Material	Manifest #	Disposal Location
62.4	05	Solidified material	2799386	US Liquids
62.4	05	Solidified Material	2799387	US Liquids
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13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3.

The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials.

14. List all safety violations observed and corrective actions taken:

See Attached: None

15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain Contractor's Designated

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 08	Task Order #: 0102	Date: 10/09/03 Thu.
Weather: cool	Temp. (Max & Min) 82/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Loading out of scrap metal and site restoration.

#### RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

4.	On-site	conditions	which	resulted	in	delayed	progress:
	None						

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $$\operatorname{Tested}\colon 0$$  To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

12. L	ist t	the	following	transportation	and/or	disposal	information:
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Quantity	I.D. #	Material	Manifest #	Disposal Location
	ų:			
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13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3.

The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials.

14. List all safety violations observed and corrective actions taken:

See Attached: None

15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain Contractor's Designate

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 09	Task Order #: 0102	Date: 10/10/03 Fri.
Weather: cool	Temp. (Max & Min) 82/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Demobilization from site.

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

4.	On-site	conditions	which	resulted	in	delayed	progress:
	None						,

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $$\operatorname{Tested}\colon 0$$  To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

# 4334 RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D. 12. List the following transportation and/or disposal information: Quantity I.D. # Material Manifest # Disposal Location 13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3. The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials. 14. List all safety violations observed and corrective actions taken: See Attached: None 15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain Dwight McFarlain Contractor's Designated

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 10	Task Order #: 0102	Date: 10/11/03 Sat.
Weather: cool	Temp. (Max & Min) 80/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Off Rotation Week-end

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

 On-site conditions which resulted in delayed progress: None

RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0 Tested: 0
To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number	r of drums overpacked: 0	
	Location	Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D. 12. List the following transportation and/or disposal information: I.D. # Material Quantity Manifest # Disposal Location 13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3. The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials. 14. List all safety violations observed and corrective actions taken: See Attached: None 15. List any credits and/or adjustments due to the government (reference

invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain

Contractor's Designated

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 11	Task Order #: 0102	Date: 10/12/03 Sun.
Weather: cool	Temp. (Max & Min) 80/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Off Rotation Week-end

#### RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

4. On-site conditions which resulted in delayed progress: None

RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $\,$  Tested: 0  $\,$ 

To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0

Location	Haz-Cat

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

# 4334 RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D. 12. List the following transportation and/or disposal information: I.D. # Material Manifest # Disposal Quantity Location 13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3. The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials. 14. List all safety violations observed and corrective actions taken: See Attached: None 15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain

Contractor's Designated

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 12	Task Order #: 0102 Date: 10/13/03 Mon	
Weather: cool	Temp. (Max & Min) 80/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Returning from rotation and mobilization

#### RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

 On-site conditions which resulted in delayed progress: None

RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $$\operatorname{Tested}\colon 0$$  To Date: 0

10 20001 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0			
	Location	Haz-Cat	

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

# RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D. 12. List the following transportation and/or disposal information: Quantity I.D. # Material Manifest # Disposal Location

13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3.

The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials.

14. List all safety violations observed and corrective actions taken:

See Attached: None

15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

·

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

wight Malan

Dwight McFarlain

Contractor's Designated

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 13	Task Order #: 0102	Date: 10/14/03 Tue.
Weather: cool	Temp. (Max & Min) 80/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Road upgrade and site restoration

#### RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

 On-site conditions which resulted in delayed progress: None

RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $\,$  Tested: 0

To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None To Date:

List the total number of drums overpacked: 0				
	Location	Haz-Cat		

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

# 4334 RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D. 12. List the following transportation and/or disposal information: I.D. # Material Manifest # Quantity Disposal Location 13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3. The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials. 14. List all safety violations observed and corrective actions taken: See Attached: None 15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain Durght Malain
Contractor's Designated

Contractor's Name: Shaw E & I Project No. 100589

Contract Number: DACA56-94-D0020

Site Name & Location. Trans Gulf Petroleum Corp. - Varner

FPN 3612 Desoto Parish La.

#### INSTRUCTIONS

The contractor shall submit this form daily at the close of business to the on-site COE representative. Concurrently, the contractor shall provide electronic access to the completed forms to the COE district office and the area office.

Report #: 14	Task Order #: 0102	Date: 10/15/03 Wed.
Weather: cool	Temp. (Max & Min) 80/58	Rainfall (in) 0

1. Description of work performed by contractor(s),

Site restoration and demobilization of dozer

#### RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

- 2. Work performed by subcontractors on site and/or off site (include a complete description)
- 3. Complete and attach the daily personnel cost report at the end of this document and label as Appendix 1.

The daily personnel cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, employee name and classification, hourly labor rates (regular, overtime or other), total hours (regular, overtime or other) and per diem. Labor costs shall be summed for each employee, the entire daily report, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of labor.

 On-site conditions which resulted in delayed progress: None

RAPID RESPONSE QUALITY CONTROL DAILY REPORT - CONT'D.

Type and results on inspections (indicate whether: P-Preparatory, I-Initial, or F-Final and include satisfactory work completed or deficiencies with action to be taken):

- 6. List type and location of tests performed and results: None
- 7. List verbal instructions received from government personnel on any deficiencies or retesting required:
- 8. Complete and attach the daily equipment cost report at the end of this document and label as Appendix 2.

The daily equipment cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, equipment type and identification number, hours in service, hours standby, hours idle time, cost rate, and days in service. Equipment costs shall be summed for each type, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of equipment.

9. List the total number of samples collected and tested for the day: Collected: 0  $\,$  Tested: 0

To Date: 0

Amplifying info:

10. List the total quantity of wastewater released on site (gal): None

To Date:

List the total number of drums overpacked: 0			
	Location	Haz-Cat	

11. List the total amount of waste(s) transported from the site:

Oil/Sludge: Solidified

Amplifying info:

12. List the following transportation and/or disposal information:

			<del></del>	
Quantity	I.D. #	Material	Manifest #	Disposal Location
Α				
2				
	·			
		-:		

13. Complete and attach the daily material cost report at the end of this document and label as Appendix 3.

The daily material cost report is required for all cost reimbursable work on site and off site including subcontractors. At a minimum, the cost report shall provide: report title, site name, contractor, contract number, delivery order number, date, material purchased, quantity and units, location of material, and vendor. Material costs shall be summed for: each purchase, the entire daily effort, the entire delivery order (up to the date of the report), and the percentage of the estimated cost of materials.

14. List all safety violations observed and corrective actions taken:

See Attached: None

15. List any credits and/or adjustments due to the government (reference invoice number, conversations, etc.)

16. Complete and attach the rapid response daily work order at the end of this document and label as Appendix 4.

The daily work order is required for all cost reimbursable work on site and/or off site including subcontractors. This document details the contractor's next day work effort which shall have advance approval by the on-site COE representative before the contractor is entitled to cost reimbursement.

- 17. Additional comments/remarks:
- 18. Certification: I CERTIFY THAT THE ABOVE REPORT IS COMPLETE AND CORRECT AND THAT I, OR MY AUTHORIZED REPRESENTATIVE, HAVE INSPECTED ALL WORK PERFORMED THIS DAY BY THE PRIMARY CONTRACTOR AND EACH SUBCONTRACTOR AND HAVE DETERMINED THAT ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP ARE IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, EXCEPT AS NOTED ABOVE.

Dwight McFarlain Swight Moralain Contractor's Designated

#### POLREP No. 1

# I. Heading

Date: Friday, March 21, 2003

Subject: Trans - Gulf Petroleum Corp. - Varner

From: OSC Wally Cooper, U. S. EPA Region VI

To: Director, ERD

Charles A. Gazda, Chief, RPB Region VI

# II. Background

Site ID No.: N/A

FPN: E03612

CERCLIS No.: N/A

Delivery Order No.: N/A

Response Authority: OPA ERNS No.: N/A

NPL Status: non-NPL Action Lead: OSLTF

State Notification: LOSCO, LDNR Start Date: February 11, 2003

Incident Category: Abandoned Completion Date: N/A

**ISAP Status: N/A** 

#### **III.** Situation Information

**A. Incident Category:** Abandoned Oil Production Facility

# 1. Site Location

Facility 16-E-1003 (JOP ID number) was referred to EPA in February of 2003 by the State of Louisiana to be considered for OPA response actions. This facility is identified as the Trans - Gulf Petroleum Corp. – Varner abandoned oil production facility and is located in Section 34, Township 12 North, Range 11 West, of Desoto Parish, Louisiana, at Latitude 31° 59' 29" N and Longitude 93° 27' 57" W. The facility was visited on February 18, 2003 and on-site observations were made at that time. Access to the facility was coordinated with Louisiana Department of Natural Resources (LDNR) Conservation Enforcement Specialist Buddy Bufkin. Attempts are underway to gain landowner access to complete assessment activities, including sampling as necessary.

The Trans-Gulf Petroleum Corp. – Varner abandoned oil production facility is located on approximately 50 acres in the Red River Bull Bayou Oil and Gas Field, 8.4 miles west southwest of the town of Coushatta, Desoto Parish, Louisiana. Approximately 5 residences are located within a one-mile radius of the facility. The facility is accessed from the northeast off of Ranch Road. There are no security features that restrict access to the tank battery and SN 152795, however a closed, unlocked ranch gate deters access to SN 152863 and SN 194686.

The facility consists of two above ground storage tanks (AST), one secondary containment basin, two pits, and three oil production wells. Two 210-barrel (bbl), welded steel ASTs, identified as AST1 and AST2 are situated within a 69-foot by 24-foot earthen berm secondary containment basin, identified as CONT1. The facility serviced three production wells, including: the Varner Well No. 001 (SN 152795), Varner Well No. 002 (SN 152863), and Varner Well No. 003 (SN 194686). All of the wells are listed as orphaned by the Louisiana Department of Natural

Resources (LDNR). Two pits were identified as associated with this facility. A 30-foot diameter reserve pit, identified as PIT1 (LDNR Pit ID 16P419), was located directly 30 feet to the west of SN 152863. A 40 by 10 foot reserve pit, identified as PIT2 (LDNR Pit ID 16P418), was also located directly west southwest of SN 152863.

Based on gauging, the following volumes of non-hazardous oilfield waste (NOW) are estimated to be present at the facility. The containers AST1 and AST2 currently contain approximately 205 bbl of oil and oily solids. The Louisiana Department of Environmental Quality (LDEQ) Hazardous Waste Division investigated the operator of this facility for his actions at a separate, nearby facility, 16-E-1002, and determined that, based on sample analysis of the contents of containers at the facility, the operator had illegally stored waste oil at that facility. Therefore the potential exists for the ASTs associated with this facility to also contain off-specification used oil. The contents of the containers will be sampled and analyzed for Resource Conservation and Recovery Act (RCRA) characteristic components to ensure that the facility can be addressed under OPA.

# 2. Description of Threat

Drainage from the facility flows to the southwest for 100 feet to Dolet Bayou. Dolet Bayou flows into Jims River, thence Bayou Pierre, and into the Red River. The Red River is "navigable" in fact and subject to interstate commerce. There are no known surface water intakes located for fifty miles down gradient from the site. There is trash in the containment basin and animal burrows which compromise the containment's berm. Threatened and Endangered species potentially located within the parish include the Bald Eagle.

The facility is considered to pose a substantial threat of release due to the 205 bbl of oil and oily solids remaining inside the facility's containers and the 3 abandoned wells associated with this facility. Also, there is an unknown volume of oil-impacted soil present in the basin and pits at the facility. Most of the accessible wells were observed to be corroded and since the facility is abandoned and receives no maintenance, the threat of release of oil is substantial.

# **B.** Response Information:

#### 1. Current Situation

EPA has conducted a preliminary site assessment and documented the conditions described above. All indications are that the site meets the basic criteria for Oil Pollution Act response action.

#### 2. Removal Activities to Date

Activities to date are the previous State enforcement actions and the current EPA assessment action.

#### 3. Enforcement

All previous enforcement efforts by LDNR have produced no timely or technically appropriate responsible party actions, as evident by the current conditions at the facility. The wells

previously identified in this report as associated with this facility and documented by LDNR as abandoned include: the Varner No. 001, (SN 152795); the Varner No. 002, (SN 152863); the Varner No. 003, (SN 194686). LDNR records indicate that Trans-Gulf Petroleum Corp. (Operator code 6040) was the last operator of these wells.

EPA will formally offer the responsible party (RP) the opportunity to conduct the necessary mitigation actions to abate any potential sources of release at the site. If the RP declines to participate, or fails to timely respond to notice, EPA plans to proceed with an OSLTF financed cleanup action. The RP is clearly advised via the notice procedure they may be subsequently held liable for the cost of government funded cleanup actions.

### 4. Planned Removal Activities

POLREP No. 2 will advise of RP actions, and the EPA OSC intentions for this abandoned facility.

# IV. Key Issues

No key issues.

#### V. Cost Information

Costs are currently limited to the assessment action.

# VI. Attachments

Attached photographs (in jpg format) include images associated with the assessment of the Trans - Gulf Petroleum Corp. - Varner Abandoned Oil Production Facility. In addition, the draft Ground Truth Survey Field Data Sheet is provided in pdf format (Adobe Reader) to supply additional details of the preliminary assessment.

DRAFT_16E1003_GTSFDS.pdf E03612_16E1003_0101.JPG E03612_16E1003_0102.JPG E03612_16E1003_0107.JPG

OSC: Wally Cooper USACE: Mike Keen







Date: October 16, 2003

Subject: FPN - NO E03622 - Trans Gulf Petroleum Corp. - Varner, DeSoto Parish, North Louisiana

From: E. Wallace Cooper, OSC, U.S. EPA, Region VI

To: Director, OERR

Charles A. Gazda, Chief, ERD, Region 6

Louisiana distribution list

**POLREP No.: 2 and Final** 

Event: Removal Action Site FPN: NO 3612

Start Date: October 01, 2003

Demobilization Date: October 14, 2003 Completion Date: October 14, 2003

Site Type: Abandoned oil production facility and associated wells

Site Latitude/Longitude: LAT 31° 59' 29.0" N/ LONG 93° 27' 57.0" W

# I. SITUATION

The Louisiana Department of Natural Resources (LDNR) contacted and requested the United States Environmental Protection Agency (USEPA), Region 6 Response and Prevention Branch, assistance with abandoned/orphaned oil production facilities in North Louisiana. The Trans Gulf Petroleum Corp. - Varner tank battery and associated wells are located in the Red River - Bull Bayou Oil and Gas Field approximately 7.7 miles southwest of the town of Coushatta in DeSoto Parish, Louisiana.

The facility consists of one (1) tank battery. The tank battery consists of two (2) above ground storage tanks (AST1 and AST2) in a secondary containment basin (CONT1). In addition six (6) orphaned wells are accordated with the facility.

Drainage from the facility routes approximately 100 feet southwest to Dolet Bayou. Dolet Bayou flows into Jims River, Bayou Pierre, and into the Red River which is navigable "in fact" and subject to interstate commerce.

The facility poses a substantial threat of release due to residual petroleum product remaining in the above ground storage tanks and CONT1. Spills may result from tank leakage, insufficient secondary containment, and from simple accumulation of rainfall into the containment basins forcing uncontrolled release of floating oil to the environment.

# II. ACTIONS TAKEN

On October 1, 2003 the removal contractor (RC) mobilized to the site and initiated removal operations.

Both above ground storage tanks were emptied of sludge and bottom contents, dismantled, cleaned, and scrapped for recycling. Approximately 130 barrels of saltwater and 145 barrels of tank sludge was removed prior to recycling.

All oil impacted soils were excavated, solidified, and stockpiled for removal. Approximately twenty-six (26) cubic yards was removed and transported to US Liquid of Elm Grove, LA.

Confirmation samples were collected and verified that the site contained less than 1% oil and grease (as required by 29B standards), thus allowing site restoration. The excavated areas were backfilled, graded, fertilized, and seeded for grass.

The RC demobilized from the facility on October 14, 2003.

## III. FUTURE PLANS

No future activities are planned at this facility.

## IV. KEY ISSUES

There are two residences located within a one-mile radius of the facility. Additional Health and Safety procedures were implemented to incorporate the residential conditions.

# V. DISPOSITION OF WASTES

One hundred and thirty (130) barrels saltwater, 145 barrels of tank sludge, and 26 cubic yards of solidified sludge was removed. All wastes were transported to U. S. Liquids in Elm Grove, Louisiana for disposal

### VI. ATTACHMENTS

Attached photos are in JPG format.

- -Photo pic1.jpg Pumping sludge contents from tanks.
- -Photo pic2.jpg Excavating and loading CONT1 oil-impacted material.
- -Photo pic3.jpg Final Grade CONT1 area.







```
#####START OF SITE####
01) Trans Gulf Petroleum Co. - Varner
02)E03612
03) DeSoto Parish, Louisiana
04)06 03 03 0002
05)
#####END OF SITE####
#####START OF RECORD#####
01)09/30/2003
02) PRECONSTRUCTION; COTTON FIELD NORTH OF THE FACILTIY
03) MVC-001F.JPG
04) Northeast
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-001F.JPG
06)1733
07) Richard
08) Papusch
09)
10)
11)1
12)1
#####END OF RECORD#####
#####START OF RECORD#####
01)09/30/2003
02) PRECONSTRUCTION; CONT1 CONEEALED BY GROWTH OF VEGETATION
03)MVC-002F.JPG
04) South-Southwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-002F.JPG
06)1733
07) Richard
08) Papusch
09)
10)
11)1
12)2
#####END OF RECORD#####
#####START OF RECORD#####
01)09/30/2003
02) PRECONSTRUCTION; CONT1 CONCEALED BY GROWTH OF VEGETATION
03) MVC-003F.JPG
04) Southwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-003F.JPG
06)1733
07) Richard
08) Papusch
09)
10)
11)1
12)3
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#####END OF RECORD#####
#####START OF RECORD#####
01)09/30/2003
02) PRECONSTRUCTION, CONT1 TANK BATTERY; FRONT TO BACK AST2 AND AST1
03) MVC-004F.JPG
04) Northeast
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-004F.JPG
06) 1737
07) Richard
08) Papusch
09)
10)
11)1
12)4
#####END OF RECORD#####
#####START OF RECORD#####
01)10/02/2003
02) CLEARED AND GRUBBED AROUND CONT1 TANK BATTERY; FRONT TO BACK, AST1
AND AST2
03) MVC-005F.JPG
04)SW
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-005F.JPG
06)0819
07)Richard
08) Papusch
09)
10)
11)1
12)5
#####END OF RECORD#####
#####START OF RECORD#####
01)10/02/2003
02) CLEARED AND GRUBBED AROUND THREE DIESEL STORAGE TANKS; NOT ASSOCIATED
WITH THE FACILITY
03) MVC-006F.JPG
04)West
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-006F.JPG
06)0821
07) Richard
08) Papusch
09)
10)
11)1
12)6
#####END OF RECORD#####
#####START OF RECORD#####
01)10/02/2003
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```
02) WORKOVER RIG ATTACHED TO VARNER WELL NO1
03) MVC-007F.JPG
04) South
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-007F.JPG
06)0822
07) Richard
08) Papusch
09)
10)
11)1
12)7
#####END OF RECORD#####
#####START OF RECORD#####
01)10/02/2003
02) GAS DRIP (SEPARATOR 1) AND METER BOX LOCATED JUST EAST OF VARNER WELL
NO1
03) MVC-008F.JPG
04)West
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-008F.JPG
06)0822
07) Richard
08) Papusch
09)
10)
11)1
12)8
#####END OF RECORD#####
#####START OF RECORD#####
01)10/02/2003
02) EMPTY 55-GALLON DRUM LOCATED BETWEEN CONT1 TANK BATTERY AND VARNER
WELL NO1
03) MVC-009F.JPG
04)West
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-009F.JPG
06) 0823
07) Richard
08) Papusch
09)
10)
11)1
12)9
#####END OF RECORD#####
#####START OF RECORD#####
01)10/02/2003
02) CLEARED AND GRUBBED AROUND CONT1 TANK BATTERY; FRONT TO BACK, AST2 AND
03) MVC-010F.JPG
04) North
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05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-010F.JPG
06)0823
07) Richard
08) Papusch
09)
10)
11)1
12)10
#####END OF RECORD#####
#####START OF RECORD#####
01)10/02/2003
02) CLEARING AND GRUBBING ACTIVITIES
03) MVC-011F.JPG
04) South-Southwest
05)C:\Documents and Settings\papuschr\Start
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06)0854
07) Richard
08) Papusch
09)
10)
11)1
12)11
#####END OF RECORD#####
#####START OF RECORD#####
01)10/03/2003
02) PIPE LINE PRODUCTION VALVE HEAD ASSOCIATED WITH CONT1
03) MVC-012F.JPG
04) South
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-012F.JPG
06)0802
07) Richard
08) Papusch
09)
10)
11)1
12)12
#####END OF RECORD#####
#####START OF RECORD#####
01)10/03/2003
02) FACILITY CLEARED AND GRUBBED; FRONT TO BACK AST2 AND AST1
03) MVC-013F.JPG
04) Northeast
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-013F.JPG
06)1117
07) Richard
08) Papusch
09)
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10)
11)1
12)13
#####END OF RECORD#####
#####START OF RECORD####
01)10/03/2003
02) FACILITY CLEARED AND GRUBBED; RIGHT TO LEFT, AST1 AND AST2
03)MVC-014F.JPG
04)West-Northwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK1\MVC-014F.JPG
06)1119
07) Richard
08) Papusch
09)
10)
11)1
12)14
#####END OF RECORD####
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#####START OF SITE####
01) Trans Gulf Petroleum Corp. - Varner
02)E03612
03) DeSoto Parish, Louisiana
04)06 03 03 0002
05)
#####END OF SITE####
#####START OF RECORD#####
01)10/06/2003
02) CUTTING OPEN AST2 WITH SHEAR TO REVEAL CONTENTS
03) MVC-014F.JPG
04)West
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-014F.JPG
06)1305
07) Richard
08) Papusch
09)
10)
11)2
12)1
#####END OF RECORD#####
#####START OF RECORD#####
01)10/07/2003
02) PUMPING CONTENTS FROM AST1 AT BASE VALVE
03)MVC-002F.JPG
04) Northwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-002F.JPG
06)0815
07) Richard
08) Papusch
09)
10)
11)2
12)2
#####END OF RECORD#####
#####START OF RECORD#####
01)10/07/2003
02)130 BBL VACUUM TANKER TRUCK PARKED AT CONT1
03) MVC-003F.JPG
04) Northwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-003F.JPG
06)0816
07) Richard
08) Papusch
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10)
11)2
12)3
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#####END OF RECORD#####
#####START OF RECORD#####
01)10/07/2003
02) PUMPING AST2 BOTTOM CONTENTS SLUDGE WITH SUPERVAC TRUCK
03) MVC-004F.JPG
04)West
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-004F.JPG
06)0941
07) Richard
08) Papusch
09)
10)
11)2
12)4
#####END OF RECORD#####
#####START OF RECORD#####
01)10/07/2003
02) SUPER VAC PUMP TRUCK AT CONT1
03) MVC-005F.JPG
04) Southwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-005F.JPG
06)0944
07) Richard
08) Papusch
09)
10)
11)2
12)5
#####END OF RECORD#####
#####START OF RECORD#####
01)10/07/2003
02) PUMPING PETROLEUM CONTENTS FROM TANK ON RIG ATTACHED TO VARNER WELL
NO. 1
03) MVC-006F.JPG
04) East-Southeast
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-006F.JPG
06)1306
07) Richard
08) Papusch
09)
10)
11)2
12)6
#####END OF RECORD#####
#####START OF RECORD#####
01)10/07/2003
02) PUMPING AST1 BOTTOM SLUDGE CONTENTS WITH SUPER VAC TRUCK
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03) MVC-007F.JPG
04) South
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-007F.JPG
06)1334
07) Richard
08) Papusch
09)
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11)2
12)7
#####END OF RECORD#####
#####START OF RECORD#####
01)10/08/2003
02) DISMANTLING AST1
03)MVC-008F.JPG
04) West-Northwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-008F.JPG
06)0801
07) Richard
08) Papusch
09)
10)
11)2
12)8
#####END OF RECORD#####
#####START OF RECORD#####
01)10/08/2003
02) DISMANTLING AST2
03) MVC-009F.JPG
04)West
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-009F.JPG
06)0801
07) Richard
08) Papusch
09)
10)
11)2
12)9
#####END OF RECORD#####
#####START OF RECORD#####
01)10/08/2003
02) PRESSURE WASHING TANK PARTS
03) MVC-010F.JPG
04)East
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-010F.JPG
06)0902
07) Richard
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08) Papusch
09)
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11)2
12)10
#####END OF RECORD#####
#####START OF RECORD#####
01)10/08/2003
02) EXCAVATING AND STOCKPILING CONT1 OIL-IMPACTED MATERIAL
03) MVC-011F.JPG
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-011F.JPG
06)1014
07) Richard
08) Papusch
09)
10)
11)2
12)11
#####END OF RECORD#####
#####START OF RECORD#####
01)10/08/2003
02) LOADING CONT1 OIL-IMPACTED MATERIAL FOR TRANSPORT AND DISPOSAL OFF
SITE
03)MVC-012F.JPG
04) West-Northwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-012F.JPG
06)1028
07) Richard
08) Papusch
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11)2
12)12
#####END OF RECORD#####
#####START OF RECORD#####
01)10/08/2003
02) CONT1 EXCAVATION FLOOR AND FIVE-POINT CONFIRMATION SAMPLE
03) MVC-013F.JPG
04) South
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-013F.JPG
06)1124
07) Richard
08) Papusch
09)
10)
11)2
12)13
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### #####END OF RECORD#####

#### #####START OF RECORD#####

- 01)10/08/2003
- 02)CONT1 EXCAVATION FLOOR AND FIVE-POINT CONFIRMATION SAMPLE
- 03)MVC-014F.JPG
- 04)North
- 05)C:\Documents and Settings\papuschr\Start

Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK2\MVC-014F.JPG

- 06)1124
- 07)Richard
- 08) Papusch
- 09)
- 10)
- 11)2
- 12)14
- #####END OF RECORD####

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#####START OF SITE####
01) Trans-Gulf Petroleum Corp. - Varner
02)E03612
03) Desoto Parish, Louisiana
04)06 03 03 0002
05)
#####END OF SITE####
#####START OF RECORD#####
01)10/08/2003
02) BACKFILLING AND GRADING CONT1 EXCAVATION
03) MVC-001F.JPG
04) West-Southwest
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-001F.JPG
06)1138
07) Richard
08) Papusch
09)
10)
11)3
12)1
#####END OF RECORD#####
#####START OF RECORD#####
01)10/08/2003
02) WELL VARNER NO. 1, SN: 152795, ATTACHED TO RIG
03)MVC-002F.JPG
04)East-Northeast
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-002F.JPG
06)1242
07) Richard
08) Papusch
09)
10)
11)3
12)2
#####END OF RECORD#####
#####START OF RECORD#####
01)10/09/2003
02) LOADING TANK SCRAP ONTO 40 CUBIC-YARD ROLL OFF BOX FOR TRANSPORT AND
RECYCLING OFFSITE
03) MVC-003F.JPG
04) South
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-003F.JPG
06)0801
07) Richard
08) Papusch
(0.9)
10)
11)3
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12)3
#####END OF RECORD#####
#####START OF RECORD#####
01)10/09/2003
02) FINAL GRADING OPERATIONS
03) MVC-004F.JPG
04)East
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-004F.JPG
06)0909
07) Richard
08) Papusch
09)
10)
11)3
12)4
#####END OF RECORD#####
#####START OF RECORD#####
01)10/15/2003
02) RESTORED ACCESS ROAD WITH ROCK
03) MVC-005F.JPG
04) North
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-005F.JPG
06)0712
07) Richard
08) Papusch
09)
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11)3
12)5
#####END OF RECORD#####
#####START OF RECORD#####
01)10/15/2003
02) RESTORED ACCESS ROAD WITH ROCK
03) MVC-006F.JPG
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-006F.JPG
06)0712
07) Richard
08) Papusch
(0.9)
10)
11)3
12)6
#####END OF RECORD#####
#####START OF RECORD#####
01)10/15/2003
02) FINAL GRADE, CONT1 TANK BATTERY AREA
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03) MVC-007F.JPG
04) South
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-007F.JPG
06)0713
07) Richard
08) Papusch
09)
10)
11)3
12)7
#####END OF RECORD#####
#####START OF RECORD#####
01)10/15/2003
02) FINAL GRADE, CONT1 TANK BATTERY AREA
03) MVC-008F.JPG
04) North
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-008F.JPG
06)0713
07)Richard
08) Papusch
09)
10)
11)3
12)8
#####END OF RECORD#####
#####START OF RECORD#####
01)10/15/2003
02) RESTORED ACCESS ROAD WITH ROCK
03) MVC-009F.JPG
04) South
05)C:\Documents and Settings\papuschr\Start
Menu\Desktop\FPNE03612\FPNE03612 PICTURES\FPNE03612 DISK3\MVC-009F.JPG
06)0724
07) Richard
08) Papusch
09)
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11)3
12)9
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#####END OF RECORD#####

























































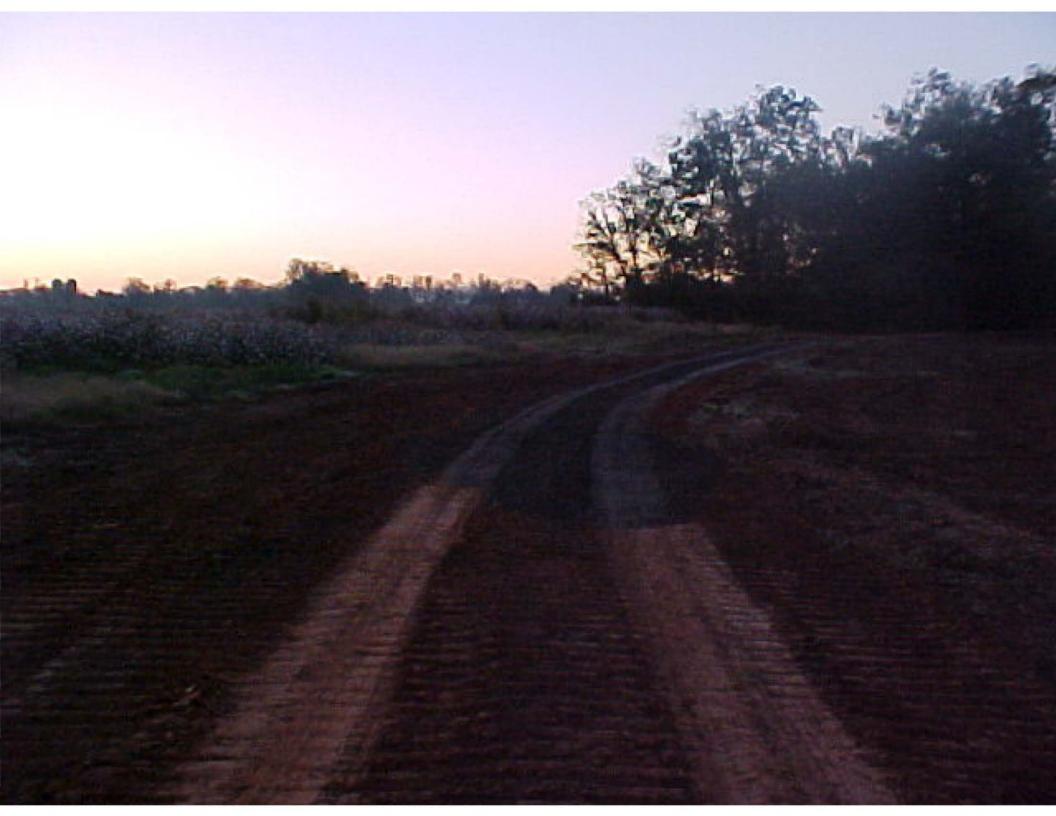


















# RECORD

FPNER 3612

TRANS-GULF PETROLEUM

CORP. - LARWER

60# 1263>.001.040.

0358.01

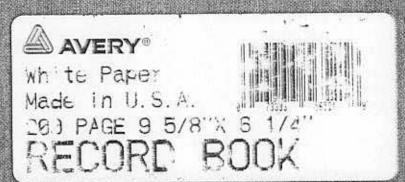
TDD# 060303030002

TDD# 060303030002

TD 10-15-2003

TD 10-15-2003

RECHARD GPAPURCH



CONTENTS
PG 1-25
PATLY LOG

FPNEU3612 9-30-1007 1630-1830: TRAVEL TO FPME \$3612 TO TAKE PRECONGINALITON PECTURES & LIED, 1949 STATE TO MOBILITY EQUEPMENT TO SETE TORAN ED 3617 - TRANSMOE IS ON TITE. WELL GIMT LONGITULTON WORTE Tovarrae. 176 du TEPARUGET 9-30-1003 2-14724

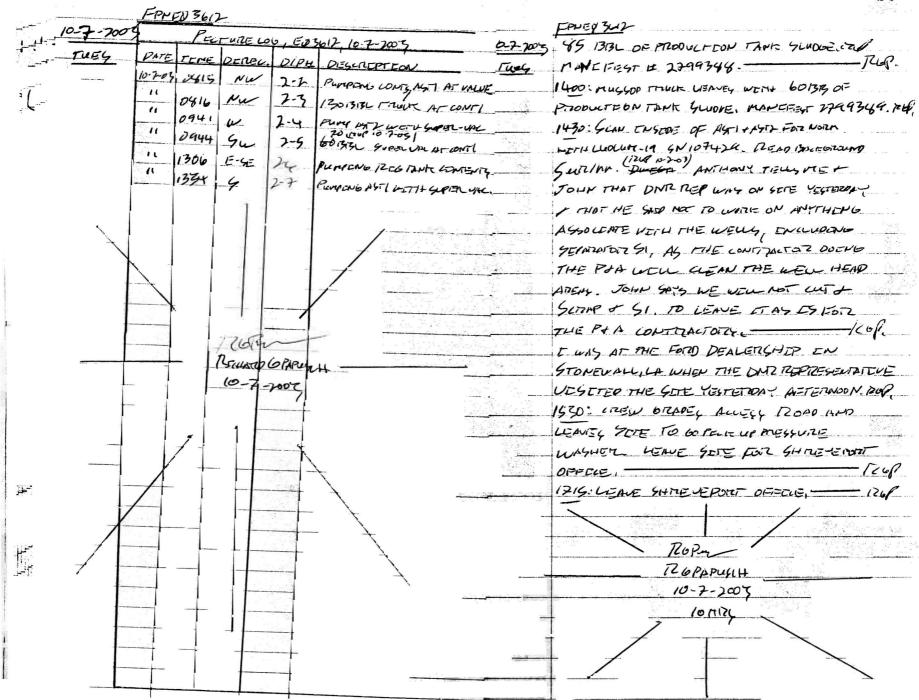
[FINER3617	FANER3612
10-7-7003 0750: ANTONE AT FAMED 3607. WEATHER Day 10-7-7103	PETUTE LOW 10-7-07 FANEASLIX
THEY THY CLEAT, CALM, of COOK. FEMPERATURE SHOP. THE THE	DISE TEME VER. D-PH DEGINESTIAN
THE DESS GITTLE ATTRONG OF SITES	10203 0819 SEL- 1-5 CONTITTS P-134 ASTIVASTE CLERK
10-203 ANTHONY KEMBER OF CHTUSTON GUNZANT, 126 Pac 5.10	1) OST W 12 WEARED, DOGE TANKE, LA ANTS
) GETF IS WEATED + GRUBBED FROM LITER	11 PART & 1-2 ROLATTIMED TO WELL OSI
YELTERONY'S ACTOR COOK, " - MIGH CLEARED LORUGED	11 DAR UN 1-8 91 GAY DIED & METERINAT BOX TO
1400 LIVER CONTENUES TO WEATH GITUBLE TOP TENT	1 543 W 1-9 SS WMON DIONE LOME TIS
the LANG OWNER DENNES PAVELL VS9517 18-7-03	1. 0877 N 1-10 (CONTITIS, FIB, 18572+1867, CLEARED
GONETO ENGINE WOLLE.	" LANG G. GLE /- 1 CLEAREAND FIBELINO SETE
MO CONTINUE TO WEAR FOIZUIS, - PUP	
MEAGORED THE SEPANATOR & POGEL TANK DEVICENSION, SEPANATOR IS SI &	
DEYEL TANKY ATLE ASTI, AST 2, ADS 3, 120	
61: 6' HOWH, 1.5' PLANETER, CAPOLITY = 1.9BBL	
Ay 3 = 4 LONG, 35 DIAMA EST, LARANT = 13.7 BISL-STOOL	
AGTY = 8 LONG, 3,5 DEWIGOR, CHTMON = (3.785C 57564)	
AGIS = 6' LONG 7.75' DEAMOREN, LATER = 64 BELLEDIN	
LOUISIANA MACHENER ON SETT WOTHERD ON GHEAD AND	12 de m
1220' LEAVE GITE FOR FANED 368 TO TAKE	1 PARILY H
FIMAL VIDED + PLETUTZEY TYP	
A property of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of th	1 10 2 2003
Clotus	
2 papers	
10-7-7007	
751717	`\
	, ,

PNEO3612 EPMER3612 1 10-3-7003 0730 ARMORE AT FRUED JUID. WEATHER -3-2003 PECTURE LOW 1503612, 10-3-08 I'S coop wing or WEAR , TEMPERATURE GRE DITHE DIFIT DEGUCTITEDIN SUPF PEPE LINE POUD VALUE HEAL 12303 JOY SHAW CHEN EY ON GETE O CONTENES, TO 1-13 PALENEY WO +613U BED; AS 21, F 10-300 1117 NE CLEAR & GRUB GETE .-10-303:19 WNL 1-14 Ex CO+63 125 TOLY ASTY. CREW 14 AMTHONY KEARNEY & LHREYTHO CONTACES. Righ. 0970: LITEL CLEATENS + WILLISTNO SETS, 126 ANTHONY ENFORMED METHAN THE DUNET OF THE HOTKIENT REGEDENCE ENFORMED HOM THE AST - Y DESEL TANKS ME HEY . SO THEY AME NOT AYGOLEATED WETH THE FACEUETY 1130 - LITEN IS CLEAREND & BRUBBENDIZA 1330: LITEN TY CLEARING + GRUBBERG TOP 126 1900: LIZEW STORY WORK & LEAVER SUTE, 174 72 PAIPLESCH LEAVE STIE FOR OFFICE . -2003 1600 STOP AT OPA OFFICE. 1645: LEAVE DAS DEFECT. TAP 2000-2045: TIZAMYPEN STIE VIDGO TO UHS. Ren 126P. RPAPUSCH 10-3-2003 101779

FAMED 3612 FPNER361) 1 10 1000 PROS: 4 TOP AT SHIVEVETORET, LIN, OPP OFFICE PELTURE LOW FAMED3617, 106-0 2-6-03 TO PECKUT LUDWY-14 WR METER ----DATE TOME DETREL. MON DIPH DECUREPTEDN 10-6-2003 DYIS: ARTICVE AT FRUE & 3612. SHAW LITEN W 2-1 LUTTOND SEN MY TOYHOW 1060, 1305 ES ON SEIE & ANTHONY KENTURY & CHRESTEND GONZALEG - WEATHER EY WOL, were cloudy & CLEARION. FORE CONDETEONS ATTE MUDDY FIRM YEST GROWING JUST ELENING, MAIN. TENGERLARINE CREW LANG THAT NO CONGTRUCTION WOTTE WAY PETHORNED LAG BATUTON 10-4-07; I-HEY CLEAMED & PETICONALD EQUEPRENT MACNTENANCE. OFFO: CHEW LEAVEY FITE TO BUY HALLSAW Mar. 2646: READ TANKY FOR NORTH WETH LUDIUM 12PARESH MODEL 19, 4N 107429, EDIL 983179, CALCERATION 106 2003 EXPORES 9-25-2003 BACKGROUND 56 LATING. #4THASTY READ SUNTAN GI READY AT BAYE 9-13 OUTUR. - POP. 1250: Crew WAY WAZTEND THEY MOTORING ON INGTRUCTIONS WHETHER ON WOT TO DIACH AGT! TO GIZOUND . THEY WETTE FOLD NOT TO , BY OFFERE A VICULA TRUCK WELL BE HEME TOMORITON 13 7 0800 TO PLUM AGTI, MOTTOR CONTENY OF ASIX, & CONTENTY OF TWE ON PGO WOME OUGT REG. 1315: CUTTEND OPEN AST 2, TO THELEAU TANK CONTENTY. FOUND 1'S' OF OCCUMENTED 1 ST. D - CLUBOE LAYETED ON TOP OF EACH STHER THE 1345 LEAVE TO PEX TACLBAGE HANDLE ON TRUNK 26 1710: LEAVE FORD DEALETSHED EN GROWEWALL

FPNEA3612 FPNER3612 1 10-6-2003 LOUI GEANA AFTER THEY REPLACED THE BROKEN 7-2003 0630: FUEL TRUCK, TACLBATE HANDLE ON THE PRUIK-- MON 0715 ARTEUE AT FPNED3612. WEATHER . 14 LOOL, LALM, & OVERLAST. TEMPERATURE 65°F. SETE CONDETEONS ATTE MUNDY- TEUP SHAW CITELL IS ON SITE & ANTHONY KEARNEY & CHREGTEND GONTALEY . TIL JOHN WHEELETT LUSALE) IS ONFITE. ROP 0730: Two VACUEN TRUCKY AIL ON SETE, ONE TOUCE IS A 130 BBL TANKER FROM BEAR CHEER ENVERONMENTAL AND THE DTHEL FRUIT IS AROM MUSGOP, INC. THEY ATTE WEND TO EMPTY THE CONTENTS OF ASTI, ASTY . THE TANKY ON THE WOTH OVETL REG RPAPUSCH. THAT IS ATTACHED TO WELL NO 1, + 10-6-2003 THE THREE DEESEL TANKS, --- PUP 10 HTG 0900: BEAR CREEK TRUCK ES PUMPONO CONTENTY FROM ASTI. 10001 BEAR UNEEK TRUCK LEAVES WETH 130 BBL OF SALTWATEN MANGEEST 2799390,1201 1216 Bean LIVER TRUCK BUT ONSETE. GUPER-UN TALLE ET STELL ON SETE - TEUP 1300: BEAR LIREEL HAS TEMPTEED ASTI OF LEQUEDL I to now purpose Distousit From RCG MUCK. THE DOESEL TANKS VETE EMPTED INTO THE LOWER CUT HALF OF ASIL WHERE THEET CONTENTY WERE PumPEO. 1330: BEAT CREEK IL DEMPEND DEELEL FROM TAKEL THON BOTTON HALF OF AST + SUPERLUIX EY PURPERO BOTTON GLUODE Enon Ayil

1300: BEAR CREEK TRUCK LEAVEY WITH



FPN=03612		CON	רו שיים			
11 110.4.2003 0715 ARREVE AT FANEO 3612. WEATHER	0 (/ 200)		E03012		10.6	07
WED I'M OVERCAST, CALM, FORWER & LOOK.	0-4-700	1	1	1		03 IZPNE03612
TEMPERATURE 69°F	WED	1			2.4	DEYLADOIDON
SHAW CHEW IS ON SETE WETH PRECLIPE		11	OXOI	w		
WAGHIETTS ANTHONY EVENTURY & CHARGETHO		1.0	0002	E	:	Property MAT
COPZALEY.	fry	-	1018	w.Pu		PRESIDENT THAT PHATE
THEY ARE GRADEHU ALLEND FORT HALL	1040/2	11	104	N		EXCHSTEPL LONG MAT.
TIZUCE ADOUM CONTI.		10	1074			LORDENG CONT MAT.
TEO: DEGNANITURO N PREGRATE WALLOWS		11				CONTIENCES PT SAFRE
AGTI & AGT J. GTART TO. TUS		71				
1000: TTUIK From MURPHY BIZOL	The sound	4	1242			CONT EXCL S-D- GAMPLE
ALTICOTE ON LIFE TO LOAD DUE INVIT	10405	ic		whe		/30
VEC-EMPRITED SOCL. CITELLES	************	11	1178	ENE	3.2	BAULIEUT WITHE CONTL WEW VATEREILE 1, W 18279
LEST FEN CHICAGO LEP PTECKURE LINE IN		) 1	17.1-		·	ATTACHED TO TOTOL
TIMELEY OF GIANOFY WHOLE						10 10 6
Criew Crugities > STOCKPOUSE TANK	4					
(Buy gluck com To MAKE LODE						
FOIZ EKLANATENG CONTI RUD'				31		
ING EXCAUATE / STOCKPOLE CONTI DEL-						
LAPACITED MATERIAL TOP			1			
1025: LONDING CONT MATERIAL DATE				7261	)	
MURPHY BITOG FITHERS FOR MANY PORT +					APUFLI	
THE TOTAL OFF SETE TO US LEGUEDL AT					->00	[
I-CA GIBUE LOUE 4 CANA TELD					,	1
1040: FRANK OFT MERANG GETT '62.4 KIR : 27902, AR				4		
- DEPARTS GETE 61.433L LZGGZGT 200			1	-		
- POUNT CONFIDENTION	9.7					
CONTINUENTED FLOOR FONED 3612 CONTINUENT		/	V			
TO ISACT-ELL & GRADE CONT		1				
EXCAUATION, TIP						
1230: TREED TO LOCATE WELL THE TETS IT. PER						
LOSA PO LUSTE, THE LOIATION AND DEVIL	7	_				
EN FIELDY MITH WEEDS & DROMISITY				1		1
		-				

ZPN CDT ()	Foreq 301
IN (COST - In Plate)	9.2003 0200 FUEL TRUCK Try
1 10-6-2005 & THOMY ON LIND WE ORNOT HAVE WITHEN	TO AT IN THE LOUIT
WED AUGUSTO THE WEEDS A BILANTSUE THORNY	TTEADY RATH EX FALLEND , YETE LONDETTONY
Are HEAD HIGH. I PROWRED VENSOL	ATTE MUDDY. TEMPERATURE 710F.
PERMICISION TO THE OFERD WELLES	GHAW CHEW IS ON SETT WARDEND METAL
Pers From Na VALUTE, THE LANDOWET TOP	GUTAR DINTO ROW OFF BOX FROM GENERAL
THE DATE ANOTHER LOW TIALTER AND LOCALE	GUTHE OUT OF GHTTEVEPOTT, LA. SHIME
TO PLUG THE FACTURY WELL AFTER	CTIEN IS ANTHONY TRAINEY + CHROSTYO
WE LEWE THE PACTUATY FOR WORK IN	CITIEN TY APILIONE HEALTHST
PONE	OSTO GULAP TRULK LEAVEY GETE. PUP
1250: THERE CY A WATER LOVE THAT WAY	WACTERS FOR JOHN WHEELER LIGHTES
EXPORD NONTHEAST OF WAT! NEAR VARNET	+ DUEBLE PLEATUREL TO ACTIONE
WELL NOT. ANTHONY COVETED IT WITH	AT FALCULY TO MEET WENT CANDULATING
) OF FOUR MATERIAL DURIEND BACKETOLL	VITE LALUETE & DOWNEE POLICE TO
+ 6 TARONG OPERWITORY. The	
LITEN I'Y GETLACING & LUTTOND UP TANK PORTY, DIG	TIE THEY WANT TO CALL A TRAIN DAY BLE
1450: CITEL HAY TAPE PATELY CUT UPO	OC650: TLATEN HAY GROPPED. GTATE FEMAL EUG)
STOCKPOLED. LEAVE GOTE PORTE PREGNATE	GRAPE OPERATEOUS.
WASHELL ISAK TO VENDON. E VENUE SEST	GILADE OPERATEOS.
FOR THE OFFICE.	1000: POPPO: TOWEL (LANDOWNED) JOHN
1800, MULTIE DE OLDERE - 196	DUEGHT MEFATIAEN (SITHWH & ItTY
170: LEW OCECUS - TOWN	- SURTICION DIVITUE ON SEIT THE
100-1030; WIETE DADY, REPORT	- MO VALUELE
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FROM:

EXPLORATION & PRODUCTION (E&P) WASTE SHIPPING CONTROL TICKET

**UIC - 28** 

STATE OF LOUISIANA OFFICE OF CONSERVATION P.O. BOX 94275 **BATON ROUGE, LA 70804-9275**  Manifest No. 2799386

ORIGINAL

2799386

CODES	PART I: TO BE COMPLETED BY GENERATOR	•
(A4A) +	Generator Trans Gulf Petroleum Corp	-Varner % USEPA
GUTU.	Address 3003 Knight St, Ste 122	(318) - 869 - 4643 Telephone No.
1	City/State/Zip Shreveport, LA 71105	Telephone No.
i	ORIGINATION OF WASTE (see instructions on back)	
leaner -	Well Name & No. / Description Uarner #	EPN- E03612
152795		Du
1031	WASTE IDENTIFICATION AND AMOUNT (IN 42 GALLON BARRELS	
A4 B 11 11 11 11		
01 Salt Water 02 Oil Base Mud	07 Frod. Sands/Solids  08 Fresh Water	14 Pipetine Water/Waste 15 Com. Facility Waste
03 Water Base Mud	08 Fresh Water	16 Oil Spill Waste
94 Completion Fluids	10 Washout Water	50 Salvage Hydrocarbons
05 Prod. Pit Sludges	62.4 33 11 Washout Pit Water	99 Other *
06 Storage Tank Sludg	es 12 Gas Plant Waste Solids	* (Written Approval Required)
SITE CODE	DESTINATION OF WASTE	
	Commercial Facility (Company) Name U.S Liquids of	<u>LA</u>
0801	Flor C	
<u> </u>	Site Name LIM Grove, LM	
CERTIFICATION: The was	ts described above was consigned to the carrier named below, i certify that the foregoing is true and	t correct to the best of my
knowled		-at
	1 m w Marker COE FOCE TA	10-8.2003 1040
/	Signature of Generator's Authorized Agent	Date and Time of Shipment
	PART II: TO BE COMPLETED BY TRANSPORTER IN PRESENCE OF GENER	BOTAL
PSC PERMIT	Transporter Murzputy Bi20>	314 - 363 · 353 · Telephone No.
6111-3	Address 70 130x 298	Telephone No.
Vindial about the	Address	Truck License No.
	City/State/Zip ARCHOEA CA 71001	Traller License No.
	If transported by barge, barge and tug identification	Trailer License No.
	in transported by barge, barge and tog identification	
CERTIFICATION: I cortify t		Barge and Tug Id.
	hat the waste in quantity shove was occived by me for shipment to the above destination.	Barge and Tug Id.
	hat the waste in quantity shove was occived by me for shipment to the above destination.	Barge and Tug Id. /0-ビースsラケー/0-ビー
garen e	hat the waste in quantity above was acceived by me for shipment to the above destination.	
	hat the waste in quantity shove was occived by me for shipment to the above destination.	10-4-7004 1040
SITE CODE	hat the waste in quantity above was acceived by me for shipment to the above destination.	10-4-7004 1040
	hat the waste in quantity above was acceived by me for shipment to the above destination.	10-4-7004 1040
	Signature of Transporter's Agent PART III:	10-4-7004 1040
	Signature of Transporter's Agent  PART III:  Chloride (Mg/I)  Conductivity (mmhos/cm)	10-4-7004 1040
	Signature of Transporter's Agent PART III:	10-4-7004 1040
SITE CODE  OSOI  24	PART III:  Chiloride (Mg/I)  Conductivity (mmhos/cm)	Date and Time Received  pH  7.2-
SITE CODE  OSOI  24	Signature of Transporter's Agent  PART III:  Chloride (Mg/I)  Conductivity (mmhos/cm)	Date and Time Received  pH  7.2-
SITE CODE  OSOI  24	PART III:  Chiloride (Mg/I)  Conductivity (mmhos/cm)	10-4-7004 1040
SITE CODE  OSOI  24	PART III:  Chiloride (Mg/I)  Conductivity (mmhos/cm)  Pat the waste described in Part Iwas received by me via the transporter described in Part III.	pH 7-2- 10-8-03

10-08-03 01:31 LO:11 COKE:
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TO-08-03 01:31 LO:11 COKE:

UIC - 28

STATE OF LOUISIANA OFFICE OF CONSERVATION P.O. BOX 94275 BATON ROUGE, LA 70804-9275

ORIGINAL

Manifest No. Z

279938

PART I: TO BE COMPLETED BY GENERATOR CODES Gulf Petroleum Corp 70 USEPA Generator 040 5+, 5+e 122 Address Shreveport, LA City/State/Zip ORIGINATION OF WASTE (see instructions on back) Weil Name & No. / Description Larner 52795 RIJOR Field Name Field Code WASTE IDENTIFICATION AND AMOUNT (IN 42 GALLON BARRELS) 01 Sad Vision 07 Prod. Sands/Solids Pipeline Water/Waste 02 Oil Base Mud Fresh Water Com. Facility Waste Water Base Mud Rainwater Oil Spill Waste Completion Fluids Washout Water Salvage Hydrocarbons Washout Pit Water Prod. Pit Sludges 05 Storage Tank Sludges Gas Plant Waste Solids * (Written Approval Required) DESTINATION OF WASTE SITE CODE Liquids Commercial Facility (Company) Name 125 0801 CERTIFICATION: The waste described above was consigned to the carrier named below, I certify that the foregoing is true and correct to the best of my Date and Tithe of Shipment PART II: TO BE COMPLETED BY TRANSPORTER IN PRESENCE OF GENERATOR PSC PERI MURPHY 13,705 111-13 Truck License No. Trailer License No If transported by barge, barge and tug identification. Barge and Tug Id. I certify that the years in qualify above vers received by migrog anipment to the above destination CERTIFICATIO S-2007 /044 Mille of Transponer's Agent TO BE COMPLETED BY COMMERCIAL FACILITY SITE CODE 980 Chloride (Mg/I) **EFFIFICAT** I certify that the waste described in Part I was received by me via the transporter described in Part II. Signature of Facility Agent  **UIC - 28** 

STATE OF LOUISIANA OFFICE OF CONSERVATION P.O. BOX 94275 BATON ROUGE, LA 70804-9275 Manifest No. 2799388

Date and Time Received

GENERATOR COPY
NO.1 2799388

CODES	PART I: TO BE COMPLETED BY GENERATOR	01.1.5 500
( 0/10 · ·	Generator Siccion July Peticleum	Vicania C/L LISEPA
6090		22 <u>B\(8) - 869 - 464 \\ Telephone No.</u>
	City/State/Zip SIVILLY CACA LA 7/165	504 N 19 10000
	ORIGINATION OF WASTE (see instructions on back)	mu 2117
158795 -	Well Name & No. / Description V (O)	FPN-3612
2651 ←	Field Code Field Name Red Rever Bull	- Bayou
	WASTE IDENTIFICATION AND AMOUNT (IN 42 GALLON BARRE	ELS)
01 Salt Water	07 Prod. Sands/Solids	14 Pipeline Water/Waste
02 Oil Base Mud	08 Fresh Water	15 Com. Facility Waste
03 Water Base Mud	09 Rainwater	16 Oil Spill Waste
04 Completion Fluid		50 Salvage Hydrocarbons
05 Prod. Pit Sludges	Kana.	99 Other •
06 Storage Tank Six	udges 867379 12 Gas Plant Waste Solids	* (Written Approval Required)
SITE CODE	DESTINATION OF WASTE	
	Commercial Facility (Company) Name	) of lA
0871	80na Alaus I A	
0001	Site Name UM SCICLE, LA	
CERTIFICATION: The w	vaste described above was consigned to the carrier named below. I certify that the foregoing is true ledge.	and correct to the best of my
	Ma) halle ( co FC 5 PA	12 7 12 12 Dom
	Signature of Generator's Authorized Agent	Date and Time of Shipment
	PART II: TO BE COMPLETED BY TRANSPORTER IN PRESENCE OF GEN	IERATOR
PSC PERMIT		
<b>─</b>	Transporter 196AD CYEEL ENU	314-363 - 7335 Telephone No.
518.7	Addis 27.160 H U G	P1501054
	Address FISO FING	Truck License No. Sego
	City/State/Zip LOTBSLAM LA 7102%	E624/44
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	If transported by barge, barge and tug identification	Barge and Tug Id.
CERTIFICATION:	fy that the waste in quantity above was received by me for shipment to the above destination.	am
CEMTIFICATION: COM	ly that the waste in quantity above was received by the for shipment to the above destination.	77/ 0
	Signature of Transporter's Agent	Date and Time Received
	PART III: TO BE COMPLETED BY COMMERCIAL FACILITY	
SITE CODE	TANTING TANTA SAME AND A COMMISSION OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE P	
	Facility (Company) Name	
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	CHEMICAL ANALYSES	_
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CERTIFICATION: I certi	ify that the waste described in Part I was received by me via the transporter described in Part II.	pm
	- 17-18-18-18-18-18-18-18-18-18-18-18-18-18-	**************************************

Signature of Facility Agent

**UIC - 28** 

## STATE OF LOUISIANA OFFICE OF CONSERVATION P.O. BOX 94275 BATON ROUGE, LA 70804-9275

Manifest No. 2799389

GENERATOR COPY NO. 1

1799389

CODES	PART I: TO BE COMPLETED BY GENERATOR	
	Generator Drans Duch Patro Varn	er C/O LISEPA
6040	Address 3003 Knight St. Ste 120	318-869-4643
	City/State/Zip Shurrary (A 711C5	Telephone No.
	ORIGINATION OF WASTE (see instructions on back)	
1507ac	Well Name & No. / Description Various	FPN-3612
152795 765L	Field Code Field Name Rid Rice Bull	Buyere
	WASTE IDENTIFICATION AND AMOUNT (IN 42 GALLON BARRELS	3)
01 Sait Water	07 Prod. Sands/Solids	14 Pipeline Water/Waste
02 Oil Base Mud	08 Fresh Water	15 Com. Facility Waste
03 Water Base Mud	09 Rainwater	16 Oil Spill Waste
04 Completion Fluids 05 Prod. Pit Sludges	10 Washout Water 11 Washout Pit Water	50 Salvage Hydrocarbons
06 Storage Tank Sludge	7-2-	* (Written Approval Required)
1	DESTINATION OF WASTE	
SITE CODE	Commercial Facility (Company) Name U.S. Lequed 3	ALIA
0801	Site Name Elm Shave LA	
		,_7.07,
CERTIFICATION: The waste	a described above was consigned to the carrier named below. I certify that the foregoing is true an	d correct to the best of my
knowledg	·/ 24 / / - 0	
	Signature of Generator's Authorized Agent	10707 140 Lpm
/		Date and Time of Shipment
PSC PERMIT	PART II: TO BE COMPLETED BY TRANSPORTER IN PRESENCE OF GENER	MAIOH
<b>─</b>	Transporter MUSCOP INC.	70-46-7-47-44 Telephone No.
631346	Address 1945 Southwar AV.	
restars		Truck License No. 1000
34 ∞ [₹	City/State/Zip FL DOR ADO AR 71730	LANCE OF MILES OF
70.000 A		Trailer License No.
	II (ISISPOILED by Daige, Daige and lug Identification	Barge and Tug Id. 10.7-926
CERTIFICATION: I certify th	at the waste-in-adjustity above was received by me for shipment to the above destination.	
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	dignature of fransporter's Agent	Date and Time Received
0.77.007.5	PART III: TO BE COMPLETED BY COMMERCIAL FACILITY	
SITE CODE	Facility (Company) Name	
in.	nien en	
<b>□</b>	Site Name	
N 7 1 2	CHEMICAL ANALYSES	
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CERTIFICATION: 1 and 1	at the waste described in Part I was received by me via the transporter described in Part II.	
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**UIC - 28** 

STATE OF LOUISIANA
OFFICE OF CONSERVATION
P.O. BOX 94275
BATON ROUGE, LA 70804-9275

Manifest No. 2799390

GENERATOR COPY NO. 1 2799390

PART TO BE COMPLETED BY GENERATOR CODES Petroleum Coro 70 USEPA Generator 1318-869 - 4643 Address Telephone No. Shreveport, LA City/State/Zip ORIGINATION OF WASTE (see instructions on back) Well Name & No. / Description UGCner # / Field Name Red River Bayou Field Code WASTE IDENTIFICATION AND AMOUNT (IN 42 GALLON BARRELS) Salt Water Prod. Sands/Solids Pipeline Water/Waste Oil Base Mud Fresh Water Com. Facility Waste 02 08 Water Base Mud Oil Spill Waste 03 Rainwater Completion Fluids Washout Water Salvage Hydrocarbons Washout Pit Water Prod. Pit Sludges Other * 05 Gas Plant Waste Solids Storage Tank Sludges (Written Approval Required) **DESTINATION OF WASTE** SITE CODE Commercial Facility (Company) Name ____ 080 The waste described above was consigned to the carrier named below. I certify that the foregoing is true and correct to the best of my CERTIFICATION: □ am knowledge. IJJ LOS - CPA PART II: TO BE COMPLETED BY TRANSPORTER IN PRESENCE OF GENERATOR **PSC PERMIT** อาร์สาราก (อาเก ค่าง ค่า ออกเครื่องหลังสารเกลสาราก ที่สำหรับ เล**Truck Ličense**) Trailer License No. Comment of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the Continue of the If transported by barge, barge and tug identification Barge and Tug Id. 310-234 eived by me for shipment to the above destination. CERTIFICATION: I certify that the waste in quantity 中からなける。ままりい、か MARINE AND THE RESERVED AND THE FOREIGN TO BE COMPLETED BY COMMERCIAL FACILITY THE PROPE SITE CODE Facility (Company) Name K X Car Connect Care · Andrews Site Name . المتديون المليد عا CHEMICAL ANALYSES HE TO PH HE PROFE 34,383 · ('Chloride (Mg/I) Conductivity (mmhos/cm) am 🗆 am CERTIFICATION: ... I certify that the waste described in Part I was received by me via the transporter described in Part II. names registrations of the property of the second statement of the second statement of the second statement of Signature of Facility Agent Date and Time Received

P O Box 81816 Lafayette LA 70598-1816

Fax: (337) 233-6540 (800) 737-2378

2417 West Pinhook Road Lafayette LA 70508-3344 (337) 235-0483

**CLIENT:** Weston Solutions, Inc.

**Lab Order:** L03110197

**Project:** Trans Gulf Petroleum

**Lab ID:** L03110197-01A **Date Received:** 06-Nov-03

Client Sample ID: FPNE03612-CONT1 CONF1

Tag Number:

**Collection Date:** 10/8/03 11:00:00 AM

Matrix: SOIL

**Date Reported:** 19-Nov-03

Analyses	Result	Detection Limit	Qual	Units	Date Analyzed	Analyst
OIL & GREASE	29B					SAM
Oil & Grease	0.02	0.01		% dry wt	11/17/03 2	2:00:00 P

Qualifiers: ND - Not Detected at the Reporting Limit

J - Anal e c ec d b w antitatic limits

B - Ana te detected the sociated lethod l ink

* - Value exceeds MCL or Permit Limitation

S - Spike Recovery outside accepted recovery limits

- RI . outside ac oted re ove lin.

Value a ve quan atio ran e

H - Exceeds Holding Time

## **FPA**

### START2 **Technical Direction Document** Oil Pollution Act Removal

Roy F. Weston

TDD: 06-03-03-0002 Contract: 68-W-01-005

U.S. EPA Region 6 1445 Ross Avenue, Suite 1200 Dallas, Texas 75202-2733

12632.001.040.0358.01

TDD - Signed by Tobin Osterberg/R6/USEPA/US on 03/18/2003 02:17:36 PM, according to Jeff Criner/start6/rfw-start/us

Priority: High Overtime: Yes Period: Base Period Start Date: 03/21/2003

Completion Date: 12/31/2003

Project/Site Name: Trans-Gulf Pet. Corp. - Varner Proiect Address: Red River-Bull Bayou Oil Field.

WorkArea: RESPONSE ACTIVITIES

County: DeSoto Parish

Activity: Oil Spill Response

Section of SOW: II.B.2

City, State Zip: Converse, La.

FPN: EO 3612

SSID: FPN EO 3612 CERCLIS: na Z6UU

Performance Based:No

Authorized TDD Ceiling:

Cost/Fee

LOE 0.0

Previous Action(s):

\$0.00 \$23,023.00

This Action: New Total:

\$23,023.00

Specific Elements - Identify potentially responsible parties, - Aanalyze the probable direction and time of travel of discharged or released materials, - Identify the pathways to human and environmental exposure, - Analyze the potential impact on human health welfare and safety and the environment posed by the release of hazardous substances contaminants or pollutants and discharge of oil, - Document costs incurred by the contractor for the response actions, - Collect or review data such as site management practices information from generators photographs historical Photographic analyses literature searches and personal interviews, - Prepare a sampling plan which describes the number type and location of samples and the type of analyses (for example sampling and analysis plans for collection of multi-media environmental samples chemical product or waste oil or other materials), - Observe and document federal state and private actions taken to conduct a response action, - Collect analyze and validate data in accordance with EPA standard methods for sample analysis, - Develop site specific Health and Safety Plans (HSPs), - Identify local and elected officials

Description of Work:

**FPN EO 3612** OPA Site ID #Z6UU

Coordinate with OSC Wally Cooper @ 318-869-4643

This TDD is under work assignment 0040.

#### Accounting and Appropriation Information

SFO: 22

Line	DCN	IFMS	Budget/ FY	Appropriati on Code	Budget Org Code	Program Element	Object Class	Site Project	Cost Org Code	Amount
1	LSR001	АЈ7	02	HR	06L0X00	50203D	2505	Z6UU0000	C001	\$23,023.00

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17,71	Previous:	\$0.00
	This Action:	\$23,023.00
	Total:	\$23,023.00

**Funding Category OPA Site Specific** 

**Task Monitor Section** 

- Signed by Wally Cooper/R6/USEPA/US on 03/18/2003 10:00:06 AM, according to Jeff Criner/start6/rfw

Task Monitor: Wally Cooper

Date: 03/18/2003

Project Officer Section - Signed by Rena McClurg/R6/USEPA/US on 03/18/2003 01:58:14 PM, according to Jeff Crin

Project Officer: Rena McClurg

Date: 03/18/2003

Contracting Officer Section - Signed by Tobin Osterberg/R6/USEPA/US on 03/18/2003 02:17:36 PM, according to Ju

Contracting Officer: Tobin Osterberg

Date: 03/18/2003